Student:

1. Simplify and collect the like terms: (-p) + (-3p) + (4p)

2. Simplify and collect the like terms: (5s - 2t) - (2s - 4t)

3. Simplify and collect the like terms:  $4x^2y + (-3x^2y) - (-5x^2y)$ 

4. Simplify and collect the like terms:  $1 - (7e^2 - 5 + 3e - e^3)$ 

5. Simplify and collect the like terms:  $(6x^2 - 3xy + 4y^2) - (8y^2 - 10xy - y^2)$ 

6. Simplify and collect the like terms:  $(7m^3 - m - 6m^2 + 10) - (5m^3 - 9 + 3m - 2m^2)$ 

7. Simplify and collect the like terms: 2(7x - 3y) - 3(2x - 3y)

8. Simplify and collect the like terms:  $4(a^2 - 3a - 4) - 2(5a^2 - a - 6)$ 

9. Simplify and collect the like terms: 15x - [4 - 2(5x - 6)]

10. Simplify and collect the like terms: 6a - [3a - 2(2b - a)]

11. Perform the operation indicated and collect the like terms: 4a(3ab - 5a + 6b)

12. Perform the operation indicated and collect the like terms:  $9k(4 - 8k + 7k^2)$ 

13. Perform the operation indicated and collect the like terms:  $-5xy(2x^2 - xy - 3y^2)$ 

 $-(p^2-4pq-5p)(\frac{2q}{p})$ 14. Perform the operation indicated and collect the like terms:

15. Perform the operation indicated and collect the like terms: (4r - 3t)(2t + 5r)

16. Perform the operation indicated and collect the like terms:  $(3p^2 - 5p)(-4p + 2)$ 

17. Perform the operation indicated and collect the like terms: 3(a-2)(4a+1)-5(2a+3)(a-7)

18. Perform the operation indicated and collect the like terms: 5(2x - y)(y + 3x) - 6x(x - 5y)

Perform the operation indicated and collect the like terms: 3x

20. Perform the operation indicated and collect the like terms:  $\frac{6a^2b}{-2ab^2}$ 

21. Perform the operation indicated and collect the like terms:  $\frac{x^2 y - xy^2}{xy}$ 

Perform the operation indicated and collect the like terms: 
$$\frac{-4x+10x^2-6x^3}{-0.5x}$$

23.  $12x^3 - 24x^2 + 36x$ **48**x Perform the operation indicated and collect the like terms:

24. +14ab<sup>2</sup> 3 2.0 Perform the operation indicated and collect the like terms:

22.

25.

 $\frac{4a^{2}b^{3}-6a^{3}b^{2}}{2ab^{2}}$ 

Perform the operation indicated and collect the like terms:

26.

 $\frac{120(1+i)^2+180(1+i)^3}{360(1+i)}$ 

Perform the operation indicated and collect the like terms:

27. Evaluate the following expression for the given value of the variable:

 $3d^2 - 4d + 15$  for d = 2.5

28. Evaluate the following expression for the given value of the variable:

15g - 9h + 3 for g = 14, h = 15

29. Evaluate the following expression for the given value of the variable:

7x(4y-8) for x = 3.2, y = 1.5

30. Evaluate the following expression for the given value of the variables:

/, *Pr* for *P* = \$500, */* = \$13.75, *r* = 0.11

accurate to the nearest cent:  $\frac{I}{r}$  for r = 0.095, I = \$23.21,  $I = \frac{283}{365}$ 

32. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent:  $\frac{\lambda^*}{1-d}$  for N =\$89.10, d = 0.10

accurate to the nearest cent:  $L(1 - d_1)(1 - d_2)(1 - d_3)$  for L =\$490,  $d_1 = 0.125$ ,  $d_2 = 0.15$ ,  $d_3 = 0.05$ 

34. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent: P(1+rr) for  $P = $770, r = 0.13, t = \frac{223}{365}$ 

accurate to the nearest cent:  $\frac{S}{1+rt}$  for  $S = $2500, r = 0.085, t = \frac{123}{365}$ 

36. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent:  $\frac{s}{v^1 + i v^n}$  for *S* = \$850, *i* = 0.0075, *n* = 6

37. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent:  $P(1 )^n$  for P = \$1280, i = 0.025, n = 3

38. Simplify the following expression and collect the like terms:

$$\frac{x}{2}x^2 + \frac{4}{5} \cdot 0.2x^2 - \frac{4}{5}x + \frac{1}{2}$$

39. Simplify the following expression and collect the like terms:

$$\frac{2x+9}{4}$$
 1.2(x-1)

40. Simplify the following expression and collect the like terms:

2 <i>x</i>	2.016x	x
1.045	3	2

41. Simplify the following expression and collect the like terms:

$$\frac{8x}{0.5} + \frac{5.5x}{11} + 0.5(4.6x - 17)$$

42. Simplify the following expression and collect the like terms. Maintain five-figure accuracy. y

$$y\left(1-0.125 \times \frac{213}{365}\right) + \frac{2y}{1+0.125 \times \frac{88}{365}}$$

43. Simplify the following expression and collect the like terms. Maintain five-figure accuracy.

$$\frac{P}{1+0.095 \times \frac{5}{12}} + 2P\left(1+0.095 \times \frac{171}{365}\right)$$

44. Simplify the following expression and collect the like terms. Maintain five-figure

accuracy.  $(1+0.055)^2$   $3h(1+0.055)^3$ 

45. Simplify the following expression and collect the like terms. Maintain five-figure accuracy. k(1 + k)

$$\frac{2k}{(1+0.04)^2}$$

<sup>46.</sup> Evaluate the following expression for the given value of the variable:  $(1+i)^m - 1$  for i = 0.0225, m

= 4

47. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent: 
$$R\left[\frac{(1+i)^{\prime\prime}-1}{i}\right]$$
 for  $R = $550, i = 0.085, n = 3$ 

accurate to the nearest cent: 
$$R\left[\frac{(1+i)^{i}-1}{i}\right](1+i)$$
 for  $R = \$910$ ,  $i = 0.1038129$ ,  $n = 4$ 

49. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent: 
$$\frac{R}{i} \left[ 1 - \frac{1}{(1+i)^{i'}} \right]$$
 for  $R =$ \$630,  $i = 0.115$ ,  $n = 2$ 

accurate to the nearest cent:  $P(1+r\tau_1) + \frac{S}{1+r\tau_2}$  for  $P = $470, S = $390, r = 0.075, r_1 = \frac{104}{365}$ .  $r_2 = \frac{73}{365}$ 

51. Simplify the following: 
$$a^2 \times a^3$$

52. Simplify the following: 
$$\left\{ x^{6} \right\} x^{-4}$$

<sup>53.</sup> Simplify the following:  $b^{10} \div b^{6}$ 

<sup>54.</sup> Simplify the following:  $h^7 \div h^{-1}$ 

55. Simplify the following:  $(1+i)^4 (1+i)^9$ 

56. Simplify the following: (1+i)(1+i)''

57.  $(x^4)^7$  Simplify the following:

58. Simplify the following:  $(r^3)^3$ 

59. (\* 6)<sup>1/3</sup> Simplify the following:

60.  $(n^{0.5})^8$ Simplify the following:

61. (x, 5, x, 6)Simplify the following:  $x^9$ 



<sup>63.</sup> Simplify the following:  $[2(1+i)]^2$ 

64. Simplify the following:  $\left[\frac{1+i}{3i}\right]^3$ 



66.

 $\frac{\left(-r^3\right)2r i^4}{\left(2r^{-2}\right)^2}$ 

Simplify the following:

67. Evaluate the following expression to six-figure accuracy:  $8^{4/3}$ 

68.

Evaluate the following expression to six-figure accuracy:  $(-27^{2/3})$ 

69. Evaluate the following expression to six-figure accuracy:  $7^{3/2}$ 

70. Evaluate the following expression to six-figure accuracy:  $5^{-3/4}$ 

<sup>71.</sup> Evaluate the following expression to six-figure accuracy:  $(0.001)^{-2}$ 

<sup>72.</sup> Evaluate the following expression to six-figure accuracy:  $0.893^{-1/2}$ 

<sup>73.</sup> Evaluate the following expression to six-figure accuracy:  $(1.0085 \ rac{1}{5} (1.0085 \ rac{1}{5}$ 

<sup>74.</sup> Evaluate the following expression to six-figure accuracy:  $\{1.005\}^3(1.005)^{-6}$ 

<sup>75.</sup> Evaluate the following expression to six-figure accuracy:  $\sqrt[3]{1.03}$ 

<sup>76.</sup> Evaluate the following expression to six-figure accuracy:  $\sqrt[9]{1.05}$ 

77.

## Evaluate the following expression to six-figure accuracy:

78.

Evaluate the following expression to six-figure accuracy:

 $\left[\left(-\frac{3}{4}\right)^2\right]^{-2}$ 

 $(4^4)(3^{-3})(-\frac{3}{4})^3$ 

79.

Evaluate the following expression to six-figure accuracy:

$$\Big(\frac{2}{3}\Big)^3\Big(-\frac{3}{2}\Big)^2\Big(-\frac{3}{2}\Big)^{-3}$$

80.

Evaluate the following expression to six-figure accuracy: 
$$\left(-\frac{2}{3}\right)^3 + \left(\frac{3}{2}\right)^{-2}$$

81.	1.03 <sup>16</sup> – 1
Evaluate the following expression to six-figure accuracy	0.03

82.	(1.0083) <sup>30</sup> -1
Evaluate the following expression to six-figure accuracy:	0.0083

83.	$1 - 1.0225^{-20}$
Evaluate the following expression to six-figure accuracy:	0.0225

84.	$1 - (1.00\overline{6})^{-32}$
Evaluate the following expression to six-figure accuracy:	0.006

<sup>85.</sup> Evaluate the following expression to six-figure accuracy:  $(1 + 0.0275)^{1/3}$ 

86. Evaluate the following expression to six-figure accuracy:  $(1+0.055)^{1/6} - 1$ 

87. Solve the following equation: 10a + 10 = 12 + 9a

88. Solve the following equation: 29 - 4y = 2y - 7

89. Solve the following equation: 0.5(x - 3) = 20

90. Solve the following equation:  $\frac{1}{3}$  (x - 2) = 4

91. Solve the following equation: y = 192 + 0.04y

92. Solve the following equation: x - 0.025x = 341.25

93. Solve the following equation: 12x - 4(2x - 1) = 6(x + 1) - 3

94. Solve the following equation: 3y - 4 = 3(y + 6) - 2(y + 3)

95. Solve the following equation: 8 - 0.5(x + 3) = 0.25(x - 1)

96. Solve the following equation: 5(2 - c) = 10(2c - 4) - 6(3c + 1)

97. Solve the following equation: 3.1t + 145 = 10 + 7.6t

98. Solve the following equation: 1.25y - 20.5 = 0.5y - 11.5

99. Solve the following pair of equations. Verify your solution.

x - y = 23x + 4y = 20
*y*-3*x*=11 -4*y*+5*x*=-30

101.Solve the following pair of equations. Verify your solution.

4*a*-3*b*=-3 5*a*-*b*=10

7*p*-3*q*=23 -2*p*-3*q*=5

103.Solve the following pair of equations. Verify your solution.

y = 2x7x - y = 35

$$\frac{4}{3}g+\frac{3}{2}h=0$$

105.Solve the following pair of equations to three-figure accuracy. Verify your solution.

0.7c + 0.2d = 550

106.Solve the following pair of equations to three-figure accuracy. Verify your solution. 0.03x + 0.05y

= 51 0.8*x*-0.7*y* = 140

107.Solve the following pair of equations to three-figure accuracy. Verify your solution.

2v + 6w = 1-9w + 10v = 18 108. Solve the following pair of equations to three-figure accuracy. Verify your solution.

2.5*a* + 2*b* = 11 8*a* + 3.5*b* = 13

109.Solve the following pair of equations to three-figure accuracy. Verify your solution.

37x - 63y = 23518x + 26y = 468 110.Solve the following pair of equations to three-figure accuracy. Verify your solution.

68.9*n* - 38.5*m* = 57 45.1*n* - 79.4*m* = -658

111.Solve the following pair of equations to three-figure accuracy. Verify your solution.

0.33*e* + 1.67*f* = 292 1.2*e* + 0.61*f* = 377

318*j* - 451*k* = 7.22 -249*j* + 193*k* = -18.79

113. Solve the following equation accurate to the cent:  $\frac{x^2}{1.1^2} + 2x(1.1)^3 = \$1000$ 

114. Solve the following equation accurate to the cent:  $\frac{3x}{1.025^6} + x 1.025^{16} = $2641.35$ 

115.Solve the following equation accurate to the cent:

$$\frac{2x}{1.03^7} + x + x(1.03^{10}) = \$1000 + \frac{\$2000}{1.03^4}$$

116.Solve the following equation accurate to the cent:

 $x(1.05)^{3} + $1000 + \frac{x}{1.05^{-1}} = \frac{$5000}{1.05^{2}}$ 

117.Solve the following equation accurate to the cent:

$$v\left(1+0.095 + \frac{84}{365}\right) + \frac{2x}{\left(1+0.095 + \frac{108}{365}\right)} = \$1160.20$$

118.Solve the following equation accurate to the cent:

$$\frac{x}{1+0.115-\frac{78}{365}}+3x\left(1+0.115+\frac{121}{365}\right)=\$1000\left(1+0.115+\frac{43}{365}\right)$$

119.Use formula (6 - 1), l = Prt, to calculate P if r = 0.05, i =\$6.25, and t = 0.25.

<sup>120.</sup> Use formula (13 - 1),  $PV = \frac{PMT}{t}$ , to calculate i if PMT = \$900 and PV = \$150,000. (There are several instances in our formulas where a two- or three-letter symbol is used for a variable. This is usually done to make the symbol more suggestive of the quantity it represents. For example, we use *PMT* to represent the amount of each payment in a series of regular payments. The symbol *P* has already been taken to represent another quantity that begins with "*p*.")

121.Use formula (6 - 2), S = P(1 + rt), to calculate *P* if r = 0.004, S = \$3626, and t = 9.

122.Use formula (4 - 1), N = L(1 - d), to calculate L if N =\$891 and d = 0.10.

123.Use formula (4 - 1), N = L(1 - d), to calculate d if N =\$410.85 and L =\$498.00.

124.Use formula (6 - 2), S = P(1 + rt), to calculate t if r = 0.0025, S = \$5100, and P = \$5000.

125.Formula (5 - 3), NI = (CM)X - FC, contains three two-letter symbols. Use it to calculate CM if NI =\$15,000, X = 5000, and FC =\$60,000.

126.Use formula (5 - 3), *NI* = *(CM)X* - *FC*, to obtain *X* if *NI* = -\$542.50, *CM* = \$13.50, and *FC* = \$18,970.

127.Use formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to calculate L if N =\$1468.80,  $d_1 = 0.20$ ,  $d_2 = 0.15$ , and  $d_3 = 0.10$ .

128.Use formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to calculate  $d_2$  if N =\$70.29, L =\$99.99,  $d_1 =$ 0.20, and  $d_3 = 0.05$ .

129.Use the formula  $FV = PV(1 + i_1)(1 + i_2)(1 + i_3)$  to determine  $i_1$  if PV = \$1000, FV = \$1094.83,  $i_2 = 0.03$ ,  $i_3 = 0.035$ .

130. Use formula (10 - 1),  $= PMT\left[\frac{G_{1+}\partial^{n}-1}{i}\right]$ , to obtain *PMT* if *FV* = \$1508.54, *n* = 4, and *i* = 0.05. 131. Use formula (10 - 2),  $PV = PMT \left[\frac{1-(1+i)^{-\pi}}{i}\right]$ , to obtain PMT if PV = \$6595.20, n = 20, and i = 0.06.

132.Rearrange formula (6 - 1), *I* = *Prt*, to isolate t on the left side.

<sup>133</sup>.Rearrange formula (13 - 1),  $PV = \frac{i}{i}$ , to isolate *i* on the left side.

134.Rearrange formula (4 - 1), N = L(1 - d), to isolate d on the left side.

135.Rearrange formula (5 - 3), NI = (CM)X - FC, to isolate CM on the left side.

136.Rearrange formula (5 - 3), NI = (CM)X - FC, to isolate X on the left side.

137.Rearrange formula (6 - 2), S = P(1 + rt), to isolate *r* on the left side.

138.Rearrange formula (6 - 2), S = P(1 + rt), to isolate t on the left side.

139. Rearrange formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to isolate  $d_1$  on the left side.

140. Rearrange formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to isolate  $d_3$  on the left side.

141.Rearrange the formula  $FV = PV(1 + i)^n$  to isolate PV on the left side.

142.Use the formula  $FV = PV(1 + i)^n$  to calculate *i* if PV = \$2000, FV = \$9321.91, and n = 20.

143.Use the formula  $PV = FV(1 + i)^{-n}$  to calculate *i* if PV = \$5167.20, FV = \$10,000, and n = 15.

144.Rearrange the formula  $FV = PV(1 + i)^n$  to isolate *i* on the left side.

145.A web site had 2/7 more hits last month than in the same month of the preceding year. If there were 2655 hits last month, how many were there 1 year earlier?

146. The retail price of a pair of skis consists of the wholesale cost to the retailer plus the retailer's markup. If skis retailing for \$712 are marked up by 60% of the wholesale cost, what is that wholesale cost?

147.The price tags in Annie's Flower Shop include the 13% Harmonized Sales Tax (HST). How much HST will she report for a plant sold at \$39.55?

148.A stockbroker's commission on a transaction is 2.5% of the first \$5000 of the transaction amount and 1.5% of the remainder. What was the amount of a transaction that generated a total commission of \$227?

149.A caterer has the following price structure for banquets. The first 20 meals are charged the basic price per meal. The next 20 meals are discounted by \$2 each and all additional meals are each reduced by \$3. If the total cost for 73 meals comes to \$1620, what is the basic price per meal?

150.Econocar offers two plans for one-week rentals of a compact car. A rate of \$295 per week includes the first 1000 kilometres. Extra distance costs 15 cents per kilometre. A weekly rate of \$389 allows unlimited driving. Rounded to the nearest kilometre, beyond what driving distance is the unlimited driving plan cheaper?

151.Alicia pays 38% income tax on any additional earnings. She has an opportunity to work overtime at 1.5 times her base wage of \$23.50 per hour. Rounded to the nearest quarter hour, how much overtime must she work to earn enough money (after tax) to buy a canoe that costs \$2750 including sales taxes? 152.Classic Homes has found from experience that there should be 40% as many two-bedroom homes as three-bedroom homes in a subdivision, and twice as many two-bedroom homes as four-bedroom homes. How many homes of each type should Classic build in a new 96-home subdivision?

153.Broadway Mazda usually spends half as much on radio advertising as on newspaper advertising, and 60% as much on television advertising as on radio advertising. If next year's total advertising budget is \$160,000, how much (rounded to the nearest dollar) should be allocated to each form of advertising? 154.A city's commercial construction by-laws require five parking spaces for every 100 square metres of retail rental space in a shopping centre. Four percent of the parking spaces must be large spaces for the physically handicapped. Of the remainder, there must be 40% more regular-size spaces than "small-car" spaces. How many parking spaces of each type are required for a 27,500 square metre shopping centre?

155.Erin has invested in both an equity mutual fund and a bond mutual fund. Her financial advisor told her that her overall portfolio rose in value by 1.1% last year. Erin noted in the newspaper that the equity fund lost 3.3% last year while the bond fund rose 7.7%. To the nearest 0.1%, what percentage of her portfolio was in the equity fund at the beginning of the year? 156.Steel is an alloy of iron and nickel. A steel recycling company has two piles of scrap steel. Pile A contains steel with 5.25% nickel content. Pile B contains steel with 2.84% nickel. The company has an order for 32.5 tonnes of steel containing 4.15% nickel. How much scrap steel should be taken from each pile for reprocessing?

157. The board of directors of Meditronics Inc. has designated 100,000 stock options for distribution to employees and management of the company. Each of three executives is to receive 2000 more options than each of eight scientists and engineers. Each scientist and engineer is to receive 50% more options than each of 14 technicians. How many options will a person in each position receive?

158.Dash Canada offers two long-distance telephone plans. Plan X costs 6.5 cents per minute for calls between 8 a.m. and 6 p.m. weekdays (business hours) and 4.5 cents per minute at other times. Plan Y costs 5.3 cents per minute any time. Above what percentage of business-hour usage will Plan Y be cheaper?

159.Quality Grocer makes its own bulk "trail mix" by mixing raisins and peanuts. The wholesale cost of raisins is \$3.75 per kg and the cost of peanuts is \$2.89 per kg. To the nearest 0.1 kg, what amounts of peanuts and raisins should be mixed to produce 50 kg of trail mix with an effective wholesale cost of \$3.20 per kg?

160.A firm received a bill from its accountant for \$3310, representing a combined total of 41 "billable" hours for both the Certified General Accountant (CGA) and her accounting technician, for conducting the firm's audit. If the CGA charges her time at \$120 per hour and the technician's time at \$50 per hour, how many hours did each work on the audit?

161.Joan, Stella, and Sue have agreed to form a partnership. For the original capital investment of \$32,760, Sue agrees to contribute 20% more than Joan, and Joan agrees to contribute 20% more than Stella. How much will each contribute? 162. The annual net income of the SGR partnership is to be distributed so that Sven receives 30% less than George, and Robert receives 25% more than George. If the past year's net income was \$88,880, what amount should be allocated to each?

163.It takes 20 minutes of machine time to manufacture Product X and 30 minutes of machine time to manufacture Product Y. If the machine operated 47 hours last week to produce a combined total of 120 units of the two products, how many units of Y were manufactured?

164.The tickets for a hockey game cost \$19.00 for the blue section and \$25.50 for the red section. If 4460 tickets were sold for a total of \$93,450, how many seats were sold in each section?

165. The annual dues for the Southern Pines Golf Club are \$2140 for regular members and \$856 for student members. If the total revenue from the dues of 583 members for the past year was \$942,028, how many members did the club have in each category?

166. The Hungry Heifer diner offers an all-you-can-eat buffet at \$12.95 per adult and \$8.95 per child. On a particular day, the diner had total buffet revenue of \$3304.70 from 266 customers. How many of the customers were children?

167.Tina drove from Calgary to Vancouver, a distance of 1000 km, in 12.3 hours. She drove at 100 km/h on the "open road," but slowed to 50 km/h on urban and curving roads. What distance did she drive at each speed? (Hint: Travelling time at a particular speed 5 Distance/Speed)

168.Mr. and Mrs. Chudnowski paid \$1050 to fly with their three children from Winnipeg to Regina. Mrs. Ramsey paid \$610 for herself and two children on the same flight. What were the airfares per adult and per child?

169.Budget Truck Rentals offers short-term truck rentals consisting of an hourly rate plus a perkilometre charge. Vratislav paid \$54.45 for a two-hour rental during which he drove 47 km. Bryn paid \$127.55 for five hours and 93 km driven. What rate did Budget charge per hour and per km? 170.Buckerfields Garden Supply makes custom fertilizer by mixing appropriate combinations of bulk 6% nitrogen fertilizer with bulk 22% nitrogen fertilizer. How many kilograms of each type should be mixed to make 300 kg of 16% nitrogen fertilizer? (Hint: The weight of nitrogen in the mixture equals the total weight of nitrogen in the two components mixed together.)

171.Colby inherited a small savings-bond portfolio consisting of four \$1000 face-value Canada Savings Bonds and six \$1000 face-value Ontario Savings Bonds. In the first year, the portfolio earned \$438 interest. At the end of the first year, Colby cashed in one of the Canada Savings Bonds and two of the Ontario Savings Bonds. In the following year, the remaining bonds earned \$306 interest. What annual rate of interest did each type of bond earn? 172.Mr. LeClair and Ms. Bartoli own adjacent hobby farms. They have just received their property tax notices providing the following assessment and tax information:

Owner's name	Assessment on residence	Assessment on land and farm buildings	Total prop- erty tax
Mr. LeClair	\$400,000	\$300,000	<b>\$3870</b>
Ms. Bartoli	\$350,000	\$380,000	\$3774

The regional government applies one tax rate to residences, and a lower tax rate to land with farm buildings. What are these property tax rates (expressed in percent to the nearest 0.01%)?

173.Product X requires 30 minutes of machining on a lathe, and product Y requires 45 minutes of machining. If the lathe was operated for 60.5 hours last week for machining a combined total of 93 units of Products X and Y, how many units of each product were produced?

174.Marichka bought 5 litres of milk and 4 dozen eggs for \$19.51. Lonnie purchased 9 litres of milk and 3 dozen eggs for \$22.98. What were the prices for a litre of milk and a dozen eggs?

175.TinyTot School purchases the same amount of milk and orange juice each week. After price increases from \$1.50 to \$1.60 per litre of milk and from \$1.30 to \$1.37 per can of frozen orange juice, the weekly bill rose from \$57.00 to \$60.55. How many litres of milk and cans of orange juice are purchased every week?

176.In the first week of July a beer and wine store sold 871 cases of beer and paid refunds on 637 cases of empty bottles, for a net revenue of \$12,632.10. For the following week the net revenue was \$13,331.70 from the sale of 932 cases and the return of 805 cases of empties. What refund did the store pay per case of empty bottles?

177.As a fundraiser, a local charity sold raffle tickets on a trip to Disney World at \$2 each or three for\$5. In all, 3884 tickets were sold for a total of \$6925. How many people bought tickets at thethree for \$5 discount?

178.A convenience store sells canned soft drinks at \$4.35 for a six-pack or 90 cents for a single can. If revenue from the sale of 225 cans of soft drinks on a weekend was \$178.35, how many sixpacks and how many single cans were sold?

179.A partnership in a public accounting practice has 7 partners and 12 accounting technicians. Each partner draws the same salary, and each technician is paid the same salary. The partners calculate that if they give the technicians a raise of 8% and if they increase their own salaries by 5%, the gross annual salaries for all accounting personnel will rise from the current \$1,629,000 to \$1,734,750. What are the current annual salaries of a partner and an accounting technician?

180.A manufacturing firm pays monthly salaries of \$5100 to each production worker and \$4200 to each assembly worker. As the economy drops into a recession, the firm decides to reduce its total monthly manufacturing payroll from \$380,700 to \$297,000 by laying off 20% of its production workers and 25% of its assembly workers. How many layoffs will there be from each of the assembly and production divisions?

181.Mr. Parker structured his will so that each of his four children will receive half as much from the proceeds of his estate as his wife, and each of 13 grandchildren will receive one-third as much as each child. After his death, \$759,000 remains after expenses and taxes for distribution among his heirs. How much will each child and grandchild receive?
182.To coordinate production in a three-stage manufacturing process, Stage B must be assigned 60% more workers than Stage A. Stage C requires three-quarters as many workers as Stage B. How should the foreman allocate 114 workers among the three stages?

183.Fred has centralized the purchasing and recordkeeping functions for his three pharmacies in a single office. The annual costs of the office are allocated to the three stores. The Hillside store is charged \$1000 less than twice the charge to the Barnett store. The Westside store is charged \$2000 more than the Hillside store. What is the charge to the Westside store if the cost of operating the central office for a year is \$27,600?

184.\$100,000 is to be distributed under a firm's profit-sharing plan. Each of 3 managers is to receive 20% more than each of 26 production workers. How much will each manager and production worker receive?

185. What is the percent Rate if a quantity is four times the size of the Base?

<sup>186</sup>. What is the percent Rate if a quantity is  $\frac{1}{1000}$  of the Base?

187.If the percent Rate is 1000%, what multiple is the Portion of the Base?

188. If the percent Rate is 0.01%, what fraction is the Portion of the Base?

189.Calculate 1.75% of \$350 accurate to the cent.

<sup>190.</sup>Calculate  $6.\overline{6}$  of \$666.66 accurate to the cent.

191.What percent is \$1.50 of \$11.50? Calculate to three-figure accuracy.

192.What percent is 88¢ of \$44? Calculate to three-figure accuracy.

193.\$45 is 60% of what amount accurate to the cent?

194.\$69 is 30% of what amount accurate to the cent?

195.What amount is 233.3% of \$75 accurate to the cent?

196.What amount is 0.075% of \$1650 accurate to the cent?

197.\$134 is what percent of \$67? Calculate to three-figure accuracy.

198.\$1.34 is what percent of \$655? Calculate to three-figure accuracy.

199.150% of \$60 is what amount accurate to the cent?

200. 0.583% of \$1500 is what amount accurate to the cent?

201.7½% of what amount is \$1.46 accurate to the cent?

202.12<sup>3</sup>/<sub>4</sub>% of what amount is \$27.50 accurate to the cent?

203. What percent of \$950 is \$590? Calculate to three-figure accuracy.

204. What percent of \$590 is \$950? Calculate to three-figure accuracy.

205.95% of what amount is \$100 accurate to the cent?

206.81/3% of what amount is \$10 accurate to the cent?

207.30 m is what percent of 3 km? Calculate to three-figure accuracy.

208.500 grams is what percent of 2.8 kilograms? Calculate to three-figure accuracy.

209. How much is ½% of \$10 accurate to the cent?

210.0.75% of \$100 is what amount accurate to the cent?

211.\$180 is 120% of what amount accurate to the cent?

212.\$559.35 is 113% of what amount accurate to the cent?

213.1301/2% of \$455 is what amount accurate to the cent?

214.0.0505% of \$50,000 is what amount accurate to the cent?

215.\$281.25 is 225% of what amount accurate to the cent?

216.350% of what amount is \$1000 accurate to the cent?

217.\$10 is 0.5% of what amount accurate to the cent?

218.\$1.25 is 34% of what amount accurate to the cent?

219.Cecilia and Nathan estimate their total cost for a vacation in Australia to be \$14,775.

a) What percentage is this cost of their combined gross monthly income of \$8775? Calculate to three-figure accuracy.

b) If 72% of their gross monthly income is already consumed by rent, taxes, car payments, and other regular living expenses, what percentage is the trip's cost of their remaining annual disposable income? Calculate to three-figure accuracy.

220.In a one-month period, a convenience store had sales of \$65,560 from its gas pumps and sales of \$36,740 from other in-store products. What percent of total sales were from gasoline? Calculate to three-figure accuracy.

221.A 540ml can of K-9 Diet dog food contains 28% protein, 15.5% fat and 6% fiber.

a) How many ml of other ingredients are there in the can?

b) The recommended serving for a small dog is 5/8 of a can. How many ml of protein are in one small dog serving?

222.A provincial Minister of Education recently announced that his government's forecast expenditure of \$2.68 billion on education next year represents 23.5% of the provincial budget. Rounded to the nearest million dollars, what is the province's total budget for the next year?

223.Unusually high snowfall during the past winter resulted in Brockton's costs for snow plowing and removal to reach \$320,200. This represents 127% of its budgeted cost. Rounded to the nearest \$100, what amount did Brockton budget for snow clearance?

224.The royalty rate performing artists receive from songs downloaded from Apple iTunes is 5.7%. If a band received royalties from Apple of \$99,736.41 for a year, how many song downloads at \$0.99 each did the band have for that year? 225.Your regular workweek is 7.5 hours per day for five days. If you do not work on seven public holidays and you receive two weeks vacation, what percentage of the total hours in a year are you actually at work? Assume that a year has exactly 52 weeks. Calculate to three-figure accuracy.

226.In the month of December, Bernie's Bargain Barn had sales of \$9,820 in their clothing department, \$4,025 in their shoe department and \$1830 in accessories. If 17% of the merchandise purchased from the clothing department was returned, 8% was returned from the shoe department and 3% was returned in accessories, what percent of the total revenue for December were the returns if full refunds were given on all merchandise?

<sup>227.</sup>Ivory hand-soap is advertised as being <sup>99 tot •</sup> pure. (It floats!) How many milligrams of impurities are in a 150-gram bar of Ivory soap?

228.An online discount broker charges a transaction fee of \$30 plus an additional 3 cents per share. A full-service broker charges a commission rate of 2.4% of the total dollar value of a stock transaction. Suppose you purchase 200 shares of the Bank of Nova Scotia at \$55.40 per share. What percentage are the total fees charged by the online discount broker of the commission you would pay the full-service broker? Calculate to three-figure accuracy. 229.A full-service broker charges a commission rate of 2.2% of the total dollar value of a stock transaction. A discount broker charges a transaction fee of \$25 plus an additional five cents per share. Suppose you purchase 800 shares of Talisman Energy at \$21.75 per share. What percentage of the commission fee charged by the full-service broker would you save by using the discount broker? Calculate to three-figure accuracy.

- 230.A province's progressive income tax rates are structured as follows: 16% tax on the first \$15,000 of taxable income, 26% on the next \$20,000, 35% on the next \$40,000, and 45% on any additional taxable income. Calculating to three-figure accuracy, what percentage is an individual's total income tax of his (taxable) income if his taxable income for a year is:
  - a) \$33,000?
  - b) \$66,000?
  - c) \$99,000?

231.In 2009, Canada's population was 33,700,000 and Japan's population was 127,600,000.
Canada's land area is 9,093,500 square kilometres but Japan's area is only 377,835 square kilometres. To the nearest 0.01%, what percentage was Canada's population density (people per square kilometre) of Japan's population density in 2009? Calculate to three-figure accuracy.

232.A property sold for 250% of what the vendors originally paid for it. What was that original price if the recent selling price was \$210,000?

233. The Calgary Flames hockey team announced that its season's ticket sales of 11,542 represents 67.50% of the Scotiabank Saddledome's seating capacity. Rounded to the nearest 100, how many seats were not sold to season's ticket holders?

234.Studies have shown that the average adult male requires 7.5 hours of sleep a night and females require 20 minutes more than males. If the average life expectancy in Canada is 82.7 years for women and 78 years for men, what percentage are the male waking hours of a female's waking hours for a lifetime?

235.Stan is a real estate salesperson. He receives 60% of the 4.8% commission that the real estate agency charges on sales. If his income for the past year was \$150,480, what was the dollar value of his sales for the year?

236.A stockbroker is paid 45% of the commission her firm charges her clients. If she personally received \$134.55 on a \$11,500 transaction, what is the firm's commission rate? Calculate to three-figure accuracy.

237.A mortality rate indicates the fraction of individuals in a population who are expected to die in the next year.

a. If the mortality rate among 35-year-old males is 0.34%, what is the expected number of deaths per year among a province's total of 50,000 such males?

b. If 35-year-old males constitute 0.83% of the overall population in a city of 1.45 million, how many deaths of such males are expected in that city in a year?

238.Calculate the missing value: Initial Value = \$95; Final Value = \$100; Percent Change =? Calculate the answer accurate to the nearest 0.01%. 239.Calculate the missing value: Initial Value = \$100; Final Value = \$95; Percent Change =?

Calculate the answer accurate to the nearest 0.01%.

240.Calculate the missing value: Initial Value = 35kg; Final Value = 135kg; Percent Change =? Calculate the answer accurate to the nearest 0.01%.

241.Calculate the missing value: Initial Value = 135kg; Final Value = 35kg; Percent Change =? Calculate the answer accurate to the nearest 0.01%. 242.Calculate the missing value: Initial Value = 0.11; Final Value = 0.13; Percent Change =? Calculate the answer accurate to the nearest 0.01%.

243.Calculate the missing value: Initial Value = 0.095; Final Value = 0.085; Percent Change =? Calculate the answer accurate to the nearest 0.01%.

244.Calculate the missing value: Initial Value = \$134.39; Final Value =? Percent Change = -12%. Calculate the answer accurate to the cent. 245.Calculate the missing value: Initial Value = 112g; Final Value =? Percent Change = 112%.

246.Calculate the missing value: Initial Value = 26.3cm; Final Value =? Percent Change = 300%

247.Calculate the missing value: Initial Value = 0.043; Final Value =? Percent Change = -30%

248.Calculate the missing value: Initial Value =? Final Value = \$75; Percent Change = 200%.

Calculate the answer accurate to the cent.

249.Calculate the missing value: Initial Value =? Final Value = \$75; Percent Change = -50% Calculate the answer accurate to the cent.

250.\$100 is what percent more than \$90? Calculate the answer accurate to the nearest 0.01%.

251.\$100 is what percent less than \$110? Calculate the answer accurate to the nearest 0.01%.

252.What amount when increased by 25% equals \$100? Calculate the answer accurate to the cent.

253.What sum of money when increased by 7% equals \$52.43? Calculate the answer accurate to the cent.

254.\$75 is 75% more than what amount? Calculate the answer accurate to the cent.

255. How much is \$56 increased by 65%? Calculate the answer accurate to the cent.

256.\$754.30 is what percent less than \$759.00? Calculate the answer accurate to the nearest 0.01%.

257.77,787 is what percent more than 77,400? Calculate the answer accurate to the nearest 0.01%.

258. How much is \$75 increased by 75%? Calculate the answer accurate to the cent.

259.\$100 is 10% less than what number? Calculate the answer accurate to the cent.

260.What amount after a reduction of 20% equals \$100? Calculate the answer accurate to the cent.

261. What amount after a reduction of 25% equals \$50? Calculate the answer accurate to the cent.

<sup>262.</sup>What amount after a reduction of <sup>16.6</sup> % equals \$549? Calculate the answer accurate to cent.

263. How much is \$900 after a decrease of 90%? Calculate the answer accurate to the cent.

264. How much is \$102 after a decrease of 2%? Calculate the answer accurate to the cent.

265. How much is \$102 after a decrease of 100%? Calculate the answer accurate to the cent.

266.\$750 is what percent more than \$250? Calculate the answer accurate to the nearest 0.01%.

267.\$250 is what percent less than \$750? Calculate the answer accurate to the nearest 0.01%.

268. How much is \$10,000 increased by 3/4%? Calculate the answer accurate to the cent.

269. How much is \$1045 decreased by 0.5%? Calculate the answer accurate to the cent.

270. What amount when increased by 150% equals \$575? Calculate the answer accurate to the cent.

271.What amount after being increased by 210% equals \$465? Calculate the answer accurate to the cent.

272. How much is \$150 after an increase of 150%? Calculate the answer accurate to the cent.

273.The total cost of a coat (including HST of 13% of the retail price) is \$281.37. What is the retailt price of the coat?

274.On the purchase of a plasma TV, the total cost to the customer (including 5% GST and 7% PST) came to \$2797.76. How much GST and how much PST did the customer pay?

275.In 2009, Canada's population reached 33,710,000, a level that was 10.56% higher than ten years earlier. Rounded to the nearest 10,000, what was the population figure for 1999?

276.Becker Tools sold 32,400 hammers at an average price of \$15.10 in Year 1 and 27,450 hammers at an average price of \$15.50 in Year 2. What was the percent change from Year 1 to Year 2 in:

- a. The number of hammers sold?
- b. The average selling price?
- c. The revenue from the sale of hammers?
- 277.An investor purchased shares of Digger Resources at a price of \$0.55 per share. One year later, the shares traded at \$1.55, but they fell back to \$0.75 by the end of the second year after the date of purchase. Calculate the percent change in the share price accurate to the nearest 0.01%:
  - a. In the first year
  - b. In the second year
  - c. Over both years

278.What was the percent change in unit price when the regular size of Lily soap bars dropped from 100 g to 90 g (with no change in the price per bar)? Calculate the answer accurate to the nearest 0.01%.

279.After Island Farms increased the container size for its premium ice cream from 1.65 L to 2.2 L, the retail price increased from \$5.49 to \$7.98. What was the percent change in the unit price? Calculate the answer accurate to the nearest 0.01%.

280.Fluffy laundry detergent reduced its regular size from 3.6 kg to 3 kg. The retail price dropped from \$7.98 to \$6.98. What was the percent change in the unit price? Calculate the answer accurate to the nearest 0.01%.

281.The retail price of Paradise Island cheddar cheese dropped from \$10.98 to \$9.98 when the package size was reduced from 700 g to 600 g. What was the percent change in the unit price? Calculate the answer accurate to the nearest 0.01%.

282.The Edmonton Real Estate Board reports that the average selling price of homes last month in the greater Edmonton area was \$338,500, an increase of 8.7% over the past year. Rounded to the nearest \$100, what was the average selling price one year ago? 283.Mountain Sports is advertising "30% Off All Skiing Equipment" in its Spring Clearance Sale. On ski boots marked down to \$348.60, what is the regular price?

284.Last year, Canada's exports to the U.S. exceeded imports from the U.S. by 23%. By what percentage were the United States' exports to Canada less than its imports from Canada? Calculate the answer accurate to the nearest 0.01%.

285.For the final seven months of 2013, Apple Computer projects sales of 55.0 million iPhones. This would outpace the projected sales of the Galaxy S4 phones by 35%. What are the projected sales for the Galaxy phone for the same period (rounded to the nearest 10,000)?

286.Projected sales for the iPhone in 2012 were 116.4 million which represented an increase of 17.2% on phones sold in 2011. How many iPhones were sold in 2011(rounded to the nearest 10,000)?

287.Mutual Fund A charges an annual management fee of 2.38% of money under management. The corresponding management fee for Mutual Fund B is 1.65%. On the same invested amount, what percentage more fees will you pay to Fund A than to Fund B? Calculate the answer accurate to the nearest 0.01%.

288.In January of 2014, the Nova Scotia government reduced the HST rate from 15% to 14%. What was the resulting percent reduction in the dollar amount of HST consumers paid on any item? Calculate the answer accurate to the nearest 0.01%.

289.In April of 2013, Facebook had 164,130,000 unique visitors, up 6.18% from a year earlier. What was the absolute increase, year-over-year, in the number of unique visitors (rounded to the nearest 10,000)?

290. The price of the shares of Nadir Explorations Ltd. fell by 76% in the past year, to the current price of \$0.45 per share. In dollars and cents, how much did the price of each share drop in the past year?

291.A piece of machinery has depreciated by 55% of its original purchase price during the past four years, to the current value of \$24,300. What is the dollar amount of the total depreciation during the last four years?

292.General Paint and Cloverdale Paint normally offer the same prices. For its Spring Specials Sale, General Paint has marked down the price of outdoor latex paint by 30%. What percentage more will you pay if you buy paint at the regular price at Cloverdale? Calculate the answer accurate to the nearest 0.01%. 293.Sears reported that its sales in January were down 17.4% from its sales in December. What percentage were December sales of January sales? Calculate the answer accurate to the nearest 0.01%.

294.If operating expenses are 40% of revenue, by what percentage does revenue exceed operating expenses?

295.A company has 50% less equity financing than debt financing. What percentage is the debt of the equity? What percentage more debt financing does the company have than equity financing?

296.Elegance shampoo has a suggested retail price of \$4.49 for its 500 ml bottle. The manufacturer of the shampoo wants to increase the unit retail price by 10% at the same time that it reduces the container size to 425 ml. What should be the suggested retail price of the smaller bottle?

297.The manufacturer of Caramalt chocolate bars wants to implement a 7.5% increase in the unit retail price along with a reduction in the bar size from 100 g to 80 g. If the current retail price of a 100-g bar is \$1.15, what should be the price of an 80-g bar?

298.Goldfield Resources' share price fell by \$4 in Year 1 and then rose by \$4 in Year 2. If the share price was \$6 at the end of Year 1, what was the percent change in share price each year? Calculate the answer accurate to the nearest 0.01%.

299.If the Canadian dollar is worth 6.5% less than the U.S. dollar, by what percentage does the U.S. dollar exceed the value of the Canadian dollar? Calculate the answer accurate to the nearest 0.01%.

300. The owner listed a property for 140% more than she paid for it 12 years ago. After receiving no offers during the first 3 months of market exposure, she dropped the list price by 10%, to \$172,800. What was the original price that the owner paid for the property?

301.A car dealer normally lists new cars at 22% above cost. A demonstrator model was sold for \$17,568 after a 10% reduction from the list price. What amount did the dealer pay for this car?

302.If the denominator of a fraction decreases by 20% and the numerator remains unchanged, by what percentage does the value of the fraction change?

303. The Hampton District school board decided to reduce the number of students per teacher next year by 15%. If the number of students does not change, by what percentage must the number of teachers be increased?

304. The Lightning laser printer prints 30% more pages per minute than the Reliable laser printer. What percentage less time than the Reliable will the Lightning require for long print jobs? Calculate the answer accurate to the nearest 0.01%. 305.If the euro is worth 39% more than the Canadian dollar, how much less (in percentage terms) is the Canadian dollar worth than the euro? Calculate the answer accurate to the nearest 0.01%.

306.A hospital can increase the dollar amount budgeted for nurses' overtime wages during the next year by only 3%. The nurses union has just won an 5% hourly rate increase for the next year. By what percentage must the hospital cut the number of overtime hours in order to stay within budget? Calculate the answer accurate to the nearest 0.01%.

307. Multiply and collect the like terms: 4(3a + 2b)(2b - a) - 5a(2a - b)

308.What amount is 17.5% more than \$29.43?

309.What amount reduced by 80% leaves \$100?

310.What amount reduced by 15% equals \$100?

311.What is \$47.50 increased by 320%?

312.What amount when decreased by 62% equals \$213.56?

313.What amount when increased by 125% equals \$787.50?

315. 
$$\frac{9y-7}{3} - 2.3(y-2)$$
Simplify and collect the like terms:

316.

$$P\left(1+0.095-\frac{135}{365}\right)+\frac{2P}{\left(1+0.095-\frac{75}{365}\right)}$$

Simplify and collect the like terms:

317.Simplify and combine the like terms: 6(4y - 3)(2 - 3y) - 3(5 - y)(1 + 4y)

318. Simplify and combine the like terms: 
$$\frac{5b-4}{4} - \frac{25-b}{1.25} + \frac{7}{8}b$$

319. 
$$\frac{x^2}{1+0.085 + \frac{53}{365}} + 2x \Big| 1+0.085 + \frac{151}{365} \Big|$$
Simplify and combine the like terms:

$$\frac{96nm^2 - 72n^2m^2}{48n^2m}$$

Simplify and combine the like terms:

321.

Evaluate accurate to the cent:  

$$P(1+r)^{2r} + \frac{S}{1+rr}$$
 for  $P = $2500, i = 0.1025, n = 2, S = $1500, r = 0.09, and$ 

<sup>322</sup>.Evaluate accurate to the cent:  $L(1-d_1(1-d_2)(1-d_3))$  for L =

 $340, d_1 = 0.15, d_2 = 0.08, d_3 = 0.05$ 

323. Evaluate accurate to the cent:  $\frac{R}{r} \left[ 1 - \frac{1}{(1+r)^{\prime\prime}} \right]$  for R = \$575, r = 0.085, n = 3

324.  $\frac{(-3x^2)^3(2x^{-2})}{6x^5}$ 

325.

Simplify:  $\frac{(-2a^3)^{-2}(4b^4)^3}{(-2b^3)(0.5a)^3}$ 

326.  
Simplify: 
$$\left(-\frac{2x^2}{3}\right)^{-2} \left(\frac{5^2}{6x^3}\right) - \frac{15}{x^5}\right)^{-1}$$

<sup>327</sup>.Evaluate to six-figure accuracy: (1.0075)<sup>24</sup>

<sup>328.</sup>Evaluate to six-figure accuracy: (1.05)<sup>1/6</sup> - 1

 $\frac{(1\!+\!0.0075\,)^{36}-1}{0.0075}$ 

Evaluate to six-figure accuracy:

330.

 $\frac{1\!-\!(1\!+\!0.045\,)^{\!-12}}{0.045}$ 

Evaluate to six-figure accuracy:

331. Evaluate to six-figure accuracy:  $\frac{(1.00\overline{6})^{240} - 1}{0.00\overline{6}}$ 

## <sup>332</sup>. Evaluate to six-figure accuracy: $(1+0.025)^{1/3} - 1$

333.  
Solve for x to five-figure accuracy: 
$$\frac{2x}{1+0.13-\frac{92}{365}} + x\left(1+0.13-\frac{59}{365}\right) = \$831$$

334.  $3x(t.03^5) + \frac{x}{1.03^3} + x = \frac{$2500}{1.03^2}$ 

Solve for *x* to five-figure accuracy:

335.

$$\frac{x}{1.08^3} + \frac{x}{2}(1.08)^4 = \$850$$

Solve for x to five-figure accuracy:

336.Solve for x to five-figure accuracy:

$$2x\left(1+0.085 + \frac{77}{365}\right) + \frac{x}{\left(1+0.085 + \frac{132}{365}\right)} = \$1565.70$$

337.Use formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to calculate  $d_2$  if N = \$324.30, L = \$498,  $d_1 = 0.20$ , and  $d_3 = 0.075$ .

338.Use the formula  $Vf = Vi(1 + c_1)(1 + c_2)(1 + c_3)$  to determine  $c_2$  if Vf = \$586.64, Vi = \$500,  $c_1 = 0.17$ , and  $c_3 = 0.09$ .

339.What percent of \$6.39 is \$16.39?

340.80% of what amount is \$100?

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341. \frac{3}{4} of what amount is $1.00?
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342.Fifteen minutes is what percentage of two hours?

343.Solve the following equations.

3x + 5y = 112x - y = 16

344.Solve each of the following pairs of equations to three-figure accuracy.

4a - 5b = 30
2a - 6b = 22
76x - 29y = 1050
-213x - 63y = 250

345.Rearrange the formula  $FV = PV(1 + i_1)(1 + i_2)$  to isolate  $i_1$ .

346.Yellowknife Mining sold 34,300 oz of gold in 1992 at an average price of \$320 per ounce. Production was down to 23,750 oz in 1993 because of a strike of the miners, but the average price obtained was \$360 per ounce. What was the percent change from 1992 to 1993 in:

- a) The amount of gold produced?
- b) The average selling price per ounce?
- c) The revenue from the sale of gold?

- 347.Two years ago the shares of Diamond Strike Resources traded at a price of \$3.40 per share. One year later the shares were at \$11.50, but then they declined in value by 35% during the subsequent year. Calculate:
  - a) The percent change in the share price during the first year.
  - b) The current share price.

348.Barry recently sold some stock after holding it for 2 years. The stock rose 150% in price during the first year but fell 40% in the second year. At what price did he buy the stock if he sold it for \$24 per share?

349.Albion Distributors' revenues and expenses for the fiscal year just completed were \$2,347,000 and \$2,189,000, respectively.

a) If in the current year revenues rise by 10% but expense increases are held to 5%, what will be the percent increase in operating profit?

b) If, instead, revenues decline by 10% and expenses are reduced by 5%, what will be the percent change in operating profit?

350. The annual net income of the Todd Bros. partnership is distributed so that Ken receives \$15,000 more than 80% of Hugh's share. How should a net income of \$98,430 be divided between the partners?

351. The profits from a partnership are to be distributed so that Grace receives 20% more than Kajsa, and Mary Anne receives five-eighths as much as Grace. How much should each receive from a total distribution of \$36,000?

352.Nguyen fishes for red snapper and lingcod off the coast of British Columbia, and delivers his catch each week to a fish buyer. On one delivery, he received \$2454.20 for 370 kg of red snapper and 264 kg of lingcod. On another occasion he was paid \$2124.70 for 304 kg of lingcod and 255 kg of red snapper. What price per kg was Nguyen paid for each type of fish?

353.Deanna is paid a base salary plus commission. On sales of \$27,000 and \$35,500 in two successive months, her gross pay was \$2815.00 and \$3197.50, respectively. What are her base salary and commission rate (in percent)?

354.Rory invested a total of \$7800 in shares of ABC Ltd. and XYZ Inc. One year later the investment was worth \$9310, after the shares of ABC had increased in value by 15% and the shares of XYZ were up 25%. How much did Rory invest in each company?

355.A hockey arena has 2500 seats in the preferred red sections near centre ice and 4500 seats in the less desirable blue sections. At regular season prices, a sell-out would generate ticket revenue of \$50,250 for a single game. Ticket prices are raised by 20% in the "blues" and 30% in the "reds" for the playoffs. Ticket revenue from a playoff sell-out would be \$62,400. What are the ticket prices for the playoffs?

356. Through a calculation (on Canadian Individual Tax Returns) known as the "Old Age Security clawback", an individual receiving Old Age Security (OAS) benefits must repay an increasing portion of these benefits to the federal government as the individual's net income rises beyond a certain threshold. If the OAS clawback is 15% of net income exceeding \$68,000, at what amount of net income must a taxpayer repay all \$6300 OAS benefits received in the year?

357.During a one-day special, a grocery store sells cucumbers at 98 cents each or four for the price of three. At the end of the day, the store's computer reports that revenue from the sale of 541 cucumbers was \$418.46. How many cucumbers were sold on the four-for-three promotion?

358. 
$$\left(\frac{3a^{3}b^{2}}{a-b}\right)^{4}$$
Simplify:

359. 
$$\left(\frac{3}{2x^2}\right)^2 \left(\frac{6x^3}{5^2}\right) - \frac{x}{5}\right)^{-1}$$
Simplify:

360.  
Simplify: 
$$\frac{(-2x)^{3}(x^{4})^{-2}}{(x^{-2})^{2}(4y)^{2}}$$

361.

 $\frac{\left[\left(x^{1/3}\right)\left(x^{-2/3}\right), \frac{3/2}{x^{-3}}\right]}{\left(8x^{3}\right)^{2/3}}$ Simplify:

362.A wholesaler sells to retailers at a 27% discount from the suggested retail price. What is the suggested retail price of an item that costs the retailer \$100?

363.Simplify: 2a - (-a) + 4a - 5a

364.Simplify: -4x - [-3x + 2(x - 6)]

365.  $R[\frac{(1+n^{n}-1)}{n}]$  for R = \$1200, i = 0.02, n = 6
366. 
$$\frac{(2x^4y^2z^3)^2}{4xyz^2}$$

367. Simplify:  $x^{-1} + x^{-4} + x^{3}$ 

368.  $\frac{1 - (1 + 0.015)^{18}}{0.015}$ 

369. Solve for the unknown variable: 3(x-6) + 5x - 2(2x-3) = 0

370.Solve for the unknown variable: 9x + 10 = -3x + 34

371.Solve for the unknown variable: 1.5a + 3(4a - 6) = a(1.5f)

372. Solve for the unknown variable:  $\frac{x}{(1 \ 02)^9} + 3x(1 \ 02)^4 - \$1000 = \frac{\$4000}{(1 \ 02)^3}$ 

373. 2x + 7y = -8Solve for the unknown variable: 5x - 2y = +9

374.  $0 \ 0.7x + 0 \ 38y = 0 \ 294$ Solve for the unknown variable:  $-0 \ 3x + 0 \ 7y = 0.37$ 

### 375. 2y = 5x

Solve for the unknown variable: 3y - 5x = 0

376.Surinder works in a retail store in Square One in Mississauga. She earns a base salary of \$320 per week, and a commission of 3% on sales over her quota of \$5000. If Surinder earned \$515 last week, what was the value of her sales?

377.Tickets for the end of semester dance sold for \$10 if purchased in advance, and \$15 if purchased at the door. If 392 tickets were sold for a total of \$4280, how many tickets were sold at the door?

378.Omar earns \$17.00 per hour for a forty-hour week. His overtime rate is 1 ½ times any hours exceeding forty in a week. If Omar earned \$807.50 last week, how many overtime hours did he work?

379.Mrs. Singh invested \$20,000 in two investments paying 2% and 3% respectively. She earned \$460 interest for the year. How much did Mrs. Singh invest at 3%?

380.Kristina is in charge of billing for a company that does computer training. She is preparing an invoice for \$1340 for 32 hours of work, which includes training at \$70 per hour and preparation of a manual at \$25 per hour. How many hours of training are included in the invoice?

381. How much is \$10 after an increase of 900%?

382.Manvir bought a stock for \$80 last week. Yesterday, the stock went up by 20%. Today it dropped by 20%. What is the current value of the stock?

383.Cliff just received a raise to \$18.45 per hour from \$18.00. What is the percent increase in his hourly rate?

384. If the CPI increases from 120.0 to 125.0 over a period, what is the percent increase in the CPI?

385.A coat is reduced by 30% to a sale price of \$45.99. What was the selling price of the coat?

386.Sales have increased by 10% over last year. What percentage less were last year's sales than this year's sales?

387.Madison found a sweater at a suburban discount mall for 25% less than at a store in downtown Toronto. What percentage more would she have paid if she bought the sweater in downtown Toronto?

388.If December sales were 30% more than November sales, by what percent are November sales less than December sales?

389.If operating expenses are 25% of revenue, by what percentage does revenue exceed operating expenses?

390.Wilfredo can do a task 35% faster than Kunal. What percentage less time than Kunal does Wilfredo take to do a task?

391.Simplify and collect like terms: -a + (2b - c) - (a - b + c)

- A. -2*a* + 3*b* 2*c* B. -2*a* + *b* - 2*c*
- C. 3*b* 2*c*
- D. -2*a* + 3*b*
- E. -2*a* + 2*b* 2*c*

392.Simplify and collect like terms: 1 - (3x - xy + y) - (-x + y - 5xy)

A. 1 - 2x - 2y - 6xyB. 1 - 2x - 2y + 6xyC. 1 - 4x - 2y + 6xyD. 1 - 2x - 2y + 4xyE. 1 - 4x - 2y - 6xy

393.Simplify and collect like terms: 3(x - 2y)(2x + y)

A.  $6x^2 - 6xy - 6y^2$ B.  $6x^2 + 10xy - 6y^2$ C.  $6x^2 - 9xy - 6y^2$ D.  $6x^2 - 9xy + 6y^2$ E.  $6x^2 + 10xy + 6y^2$ 

394.Simplify and collect like terms: 9x - [4y - 3(x - y)]

A. 12x + 7y

B. 6*x* - 7*y* 

- C. 6x + 7y
- D. 12*x* 7*y*
- E. 9*x* 7*y*

395.Simplify and collect like terms:

 $\frac{4x+5}{8} - 2.1(x-7)$ 

A. -1.6*x* - 14.075

- B. -1.6*x* 15.325
- C. 2.6*x* + 15.325
- D. 2.6*x* 14.075
- E. -1.6*x* + 15.325

396.

Simplify and collect like terms: 
$$\frac{x}{5} + \frac{2}{5} - 0.7x^2 - \frac{3}{5}x + \frac{3}{4}$$

A.  $-0.7x^2 - 4x + 1.15$ 

B.  $9.7x^2 - 4x + 1.15$ 

C.  $-0.7x^2 - .4x + .35$ 

D.  $0.7x^2 - 4x + 35$ 

E.  $-0.7x^2 + 8x + 1.15$ 

397.

$$\frac{P}{1+0.07\times\frac{5}{12}} + 2P(1+0.07\times\frac{4}{12})$$
IS: 12

Simplify and collect like terms:

- A. 3.076*P*
- B. 3.018*P*
- C. 2.787*F*
- D. 3.532*F*
- E. 2.956*P*

398.

$$x(1+0.045 \times \frac{55}{365}) + \frac{2x}{(1-0.045 \times \frac{200}{365})}$$

Simplify and collect like terms:

- A. 2.957*x*
- B. 2.208*x*
- C. 3.057*x*
- D. 2.068*x*
- E. 1.983*x*

 $\frac{12xy - 6y^2}{3y}$ 

Simplify and collect like terms:

A. 
$$\frac{4x+2y}{2}$$

399.

 $\mathsf{B}_{i}^{-4}\mathfrak{M} = 2\mathfrak{g}$ 

C.  $4xy + 2y^2$ 

- D. 4x 2y
- $\mathsf{E}_{\varepsilon}^{-4xy^{1}} = 2y^{2}$

400.  $\frac{10xy^2 - 15x^3y^2 + 25xy^4}{5xy}$ Simplify and collect like terms: 5xy

- A.  $2y^2 3x^2y + 5y^3$
- B.  $2xy 3x^2y + 5y^3$
- C.  $2y 3x^2y + 5y$
- D.  $2y 3x^2 + 5y$

 $= 2y - 3x^2y + 5y^3$ 

401.Evaluate the following expression: 3x + 4y - 6xy, for x = 2, y = -3

- A. 30 B. -42
- C. 54
- D. -18
- E. 24

402.

Evaluate the following expression: P(1+rt), for P = \$1575, r = .055,  $t = \frac{168}{365}$ 

- A. \$39.87
- B. \$1614.87
- C. \$1973.71
- D. \$16,128

E. \$724.96

<sup>403.</sup>Simplify the following:  $a^2 a^6 a$ 

A. a<sup>8</sup>
 B. a<sup>7</sup>
 C. a<sup>9</sup>
 D. a<sup>12</sup>
 E. a<sup>13</sup>

<sup>404</sup> Simplify the following:  $(a^3)(a^{-6})(a^3)$ 

405.Simplify the following:  $b^* \div h^2$ 

A. b<sup>+</sup>
B. b<sup>10</sup>
C. b<sup>10</sup>
D. b<sup>-6</sup>
E. b<sup>6</sup>

<sup>406.</sup>Simplify the following:  $y^* + y^{-1}$ 

A. y<sup>13</sup>

В. *у*<sup>3</sup>

C. ب<sup>.40</sup>

D. ب<sup>.40</sup>

 $\mathsf{E}, \, y^{-\omega}$ 

407.Simplify the following:  $(x^{5})^{4}$ 

A. x<sup>9</sup>
 B. x<sup>20</sup>
 C. x

D. ،<sup>-۱</sup>

E. x<sup>0</sup>

<sup>408</sup>.Simplify the following:  $(2x^3)^5$ 

A. <sup>10</sup>3<sup>13</sup>

В. <sup>32x<sup>8</sup></sup>

C. -32x<sup>13</sup>

D. 2x<sup>13</sup>

 $2x^8$ 





410.	$(a^3)^{-2}$
Simplify the following:	a



E. a<sup>-12</sup>

- 411.  $\frac{(2a^3b^2)^4}{a^2b^3}$ 
  - A. 16a<sup>10</sup>b\*
  - B. 2*a*<sup>10</sup>*b*<sup>5</sup>
  - C. 16a<sup>3</sup>b<sup>3</sup>
  - D.  $2a^{5}b^{5}$
  - E. 16*a<sup>3</sup>b<sup>3</sup>*

412.  
Simplify the following: 
$$\left(\frac{4x}{2x^3}\right)^2 \left(\frac{3x^2}{2y^3}\right)^2 \left(\frac{3xy}{5}\right)^{-1}$$

A. 
$$\frac{5x^2}{16y^3}$$

$$\mathsf{B.} \ \frac{15x^3}{16y^3}$$

C. 
$$\frac{5x^3}{8y^2}$$

$$\mathsf{D}. \ \frac{15x^3}{4y^3}$$

E. 
$$\frac{5x^2}{8y^2}$$

413.Evaluate the following:  $25^{3/2}$ 

A. 8.6

- B. 37.5
- C. 125
- D. 5
- E. 625

# <sup>414.</sup> Evaluate the following: $-16^{\frac{1}{4}}$

- A. 32
- B. 64
- C. -64
- D. -32
- E. 10

415.	Jun 1896
Evaluate the following:	V

- A. 14,857.17
- B. 487.56
- C. 3714.29
- D. 60.945
- E. 11.04

416.	$1.04^{10} - 1$
Evaluate the following:	0.04

- A. 12.006
- B. 698.137
- C. 1.201
- D. 36.006
- E. 35.58

417.	$1.055^{6} - 1$
Evaluate the following:	0.055

- A. 233.95
- B. 6.888
- C. 0.689
- D. 23.395
- E. 23.763

418.	$1 - 1 \ 0.75^{-8}$
Evaluate the following:	0.075

- A. -5.857
- B. -10.446
- C. 5.857
- D. 0.5857
- E. 13.485

419.	$1 - 1.056^{-15}$
Evaluate the following:	0.056

- A. -9.971
- B. -22.579
- C. 58.29
- D. 9.971
- E. 25.743

420. 
$$\left(\frac{4}{3}\right)^{2} \left(\frac{3}{4}\right)^{-3} \left(\frac{4}{3}\right)^{-3}$$

Evaluate the following:

A.	$\frac{4}{3}$
B.	$\frac{3}{4}$
C.	$\frac{16}{3}$
D.	<del>1</del> 9
E.	1

- 421.The retail price of a sweater is \$161.00, which includes a markup of 40% of cost. What is the cost price of the sweater?
  - A. \$115
  - B. \$70.84
  - C. \$64.40
  - D. \$96.60
  - E. \$100.63

- 422.The retail price of a packaged CD is \$60.00, which includes a markup of 150% of cost. What is the cost price of the CD?
  - A. \$40
  - B. \$24
  - C. \$36
  - D. \$20
  - E. \$32
- 423.The commission on a transaction is 3% of the first \$100,000 and 2% of the balance. What was the amount of a transaction where the commission charged was \$10,100?
  - A. \$225,000
  - B. \$545,000
  - C. \$310,000
  - D. \$355,000
  - E. \$455,000
- 424.Sam has \$20,000 to invest. He invested part at 5% and part at 6%. His investments earned \$1120 total interest for the year. How much did Sam invest at each rate?
  - A. \$12,000; \$8000
  - B. \$10,000; \$10,000
  - C. \$6000; \$14,000
  - D. \$14,000; \$6000
  - E. \$8000; \$12,000

- 425.Anders has \$35,000 to invest. He invested part at 5.5% and part at 7%. His investments earned \$2195 total interest for the year. How much did Anders invest at each rate?
  - A. \$17,000; \$18,000
  - B. \$18,000; \$17,000
  - C. \$20,000; \$15,000
  - D. \$15,000; \$20,000
  - E. \$10,000; \$25,000
- 426.Tickets for the school play were \$3 for students and \$5 for all others. The box office sold 750 tickets for a total of \$3200. How many student tickets were sold?
  - A. 475
  - B. 275
  - C. 500
  - D. 250
  - E. 300
- 427.At a United Way fund raiser, students sold cinnamon buns for \$2 each or 3 for \$5. They sold 500 all together, and raised \$900. How many of the 3 for \$5 were sold?
  - A. 100
  - B. 200
  - C. 300
  - D. 250
  - E. 150

428.Stavros sells gold and green fabric in his drapery store. He buys the same quantity of both each quarter for \$18 per metre for the gold fabric and \$20 for the green fabric. His last order totalled \$2290. The supplier has advised Stavros that the gold fabric will increase by 20% and the green fabric by 25%, and his total order for the next quarter will be \$2813. How many metres of gold fabric does Stavros order each quarter?

A. 65 B. 56 C. 85

- D. 55
- E. 25

429.What was the percent change in unit price when a box of tissues dropped from 200 to 150 tissues per box? (with no change in the price per box)?

- A. 25%
- B. 20%
- C. 30%
- D. 35%
- E. 33.3%

- 430.What was the percent change in unit price when a box of tissues dropped from 400 to 350 tissues per box? (with no change in the price per box)?
  - A. 12.5%
  - B. 15%
  - C. 17.5%
  - D. 11.7%
  - E. 14.3%
- 431.What is the percent change in unit price of a bag of cookies if the number of cookies per box is decreased by 15% (with no change in the price per bag)?
  - A. 17.6%
  - B. 15%
  - C. 20%
  - D. 10%
  - E. 11.1%
- 432.A loan company dropped the interest rate it charges on second mortgages from 9.5% to 7.9%.

What percent reduction did this represent?

- A. 16%
- B. 16.8%
- C. 1.6%
- D. 20.3%
- E. 15.7%

- 433.A loan company dropped the interest rate it charges on second mortgages from 8.7% to 7.3%. What percent reduction did this represent?
  - A. 1.4%
  - B. 19.2%
  - C. 16.1%
  - D. 14%
  - E. 15.6%
- 434.If the Canadian dollar is worth 18% less than the U.S. dollar, by what percentage does the U.S. dollar exceed the value of the Canadian dollar?
  - A. 15%
  - B. 18%
  - C. 24%
  - D. 21.95%
  - E. 20%
- 435.If the Canadian dollar is worth 22% less than the U.S. dollar, by what percentage does the U.S. dollar exceed the value of the Canadian dollar?
  - A. 22%
  - B. 20%
  - C. 25.2%
  - D. 30.8%
  - E. 28.2%

436.A car dealer normally lists cars at 25% above cost. During a sale the manger offered a 10% reduction. If a car sold for \$20,812.50, what was the cost price to the dealership?

A. \$18,500

- B. \$23,125
- C. \$18,315
- D. \$16,650
- E. \$17,250
- 437.If the euro is worth 60% more than the Canadian dollar, how much less (in percentage terms) is the Canadian dollar worth than the euro?
  - A. 40%
  - B. 37.5%
  - C. 62.5%
  - D. 45%
  - E. 55%

438.If the euro is worth 57% more than the Canadian dollar, how much less (in percentage terms) is

the Canadian dollar worth than the euro?

- A. 43%
- B. 63.7%
- C. 36.3%
- D. 42%
- E. 45%

439.Simplify: 8 - (2x + 4y - 3) - (4y + 10)

A. -8*y* - 2*x* + 21 B. -8*y* - 2*x* + 1 C. -8*y* - 2*x* - 2 D. -2*x* + 1

E. -2*x* + 21

440.Solve the following equation (5x - 2y)(x - 2y) =

A.  $5x^2 - 12xy - 4y^2$ B.  $5x^2 + 8xy - 4y^2$ C.  $5x^2 - 12xy + 4y^2$ D.  $5x^2 - 8xy + 4y^2$ E.  $5x^2 + 12xy + 4y^2$ 

441.Solve the following equation 2(b - 2) - (b - 2) =

A. *b* + 6

- B. 3*b* 2
- C. 3b + 2
- D. *b* 2
- E. *b* 6

442.Evaluate: -4(r - t) - (2r - 4t) for r = 1/2 and t = 1/4.

- A. 1 B. 5
- C. 3
- D. -5
- E. -1

443. Solve the following equation  $\frac{6a+9}{3} - 4(a-1) =$ 

- A. -2*a* + 13 B. -2*a* - 1 C. -2*a* + 7
- D. 2*a* + 7
- E. 2*a* 1

444.Evaluate:  $L(1 - d_1)(1 - d_2)$  for  $L = $1000, d_1 = 0.30$ , and  $d_2 = 0.20$ .

- A. \$440.00
- B. \$500.00
- C. \$1785.71
- D. \$560.00
- E. \$600.00

<sup>445</sup>.Solve the following equation  $2.48832^{1/5} =$ 

A. 95.396217

B. 0.0104826

C. 1.2

D. 3.0

E. 0.8333333

#### 446.

Solve the following equation  $\left( \begin{array}{c} r^{3}t^{4} \\ r \end{array} \right)^{3} =$ 

#### A. /<sup>9</sup>ť4

B. *r*<sup>6</sup>*t*<sup>6</sup>

C. /<sup>6</sup>f<sup>7</sup>

D. /<sup>9</sup>ť<sup>11</sup>

E. /<sup>9</sup>ť<sup>9</sup>

447.  $\frac{(r^{\circ})^{2}(r^{\circ})}{r^{12}} =$ 

# A. *r*<sup>5</sup> B. *r*<sup>17/12</sup>

C. *1*<sup>12</sup>

D. *1*²

E. *1*<sup>36</sup>

Α.	1024

B. 256

- C. 4
- D. 48
- E. 16

449. Solve for x:  $2x + \frac{1}{8}x = x + 10$ 

A. 3<sup>1</sup>/<sub>5</sub>

#### В. **8** <del>8</del>

C.  $-3\frac{1}{5}$ 

## D. 4<sup>12</sup>/<sub>17</sub>

### E. <u>9</u>

450.Solve for x: 2/3(x+3) = -1/2(6x+20) + 15

A. 2 5/6

B. <del>9</del> 11

C. 1.5

D. -2<sup>13</sup>/<sub>22</sub>

E. 3.875

451.	$-\left(\frac{1}{-x-5}\right)$
Solve for <i>x</i> .	$\binom{2^{n-2}}{2} = 2x - 10$

A. 6

В. -6

C. -10

D. 3 1/3

E. 10

452.  $\frac{x}{1.5^2} + 3x(1.5)^2 = 100$ 

- A. 13.9082
- B. 13.8996
- C. 14.8148
- D. 25.0000
- E. 225.0000
- 453.An employee earns \$1562.50 for 55 hours of work during last week. His regular workweek is 40 hours and he gets overtime at time and one-half the regular rate of pay. What is the regular hourly rate of pay?
  - A. \$37.50
  - B. \$28.41
  - C. \$42.61
  - D. \$58.59
  - E. \$25.00
- 454. The stock market index decreased this month by one-thirteenth of last month's index. If this month's index is 2400, what was last month's index?
  - A. 2585
  - B. 2320
  - C. 2483
  - D. 2600
  - E. 2215

- 455.A company laid off 80% of its work force. The number of employees after the layoff is 3000. How many employees were there before the layoff?
  - A. 5400
  - B. 7200
  - C. 3600
  - D. 15,000
  - E. 3750
- 456.John and Jill agree to form a partnership. The partnership agreement requires that John invests \$7000.00 less than one-half of what Jill is to invest. If the total investment of both is \$125,000.00, how much is Jill's investment?
  - A. \$88,000.00
  - B. \$37,000.00
  - C. \$78,666.67
  - D. \$46,333.33
  - E. \$74,393.33

457.If actual sales of \$18,000 were 36% of budgeted sales, what were the budgeted sales?

- A. \$50,000
- B. \$52,920
- C. \$25,920
- D. \$10,080
- E. \$46,080
- A. 120
- B. 128
- C. 384
- D. 72
- E. 125

459.0.51% of \$8500.00 =

- A. \$43,444.44
- B. \$1663.04
- C. \$43.35
- D. \$166,304.35
- E. \$434.44

460.35% of \$180.00 is what amount?

- A. \$63.00
- B. \$243.00
- C. \$117.00
- D. \$514.29
- E. \$276.92

461. **87**<sup>1</sup>/<sub>2</sub> ↔ less than 250?

- A. 218.75
- B. 468.75
- C. 133.33
- D. 383.33
- E. 31.25

<sup>462.</sup>After adding  $2\frac{1}{4}$ ° to a sum of money, the new amount is \$45,000.00. What was the original amount of money?

- A. \$43,987.50
- B. \$44,009.78
- C. \$2,000,000.00
- D. \$46,035.81
- E. \$20,000.00

463.Susan is paid a 15% commission of her sales. If she earns a commission of \$3800, what was the amount of her sales?

- A. \$44,705.88
- B. \$25,333.33
- C. \$4470.59
- D. \$7030.00
- E. \$3230.00

- 464.An item listed at 40% above cost was sold by a dealer during a special sale at a 15% reduction from the list price. What did the item cost the dealer if it was sold for \$23,765.00?
  - A. \$23,494.81
  - B. \$33,271.00
  - C. \$19,970.59
  - D. \$27,958.82
  - E. \$43,965.25
- 465.After real estate fees of 3% had been deducted from the proceeds of the sale of a property, the real estate agent sent the vendor (seller) of the property \$244,400. What was the amount of fees retained by the real estate agent?
  - A. \$7558.76
  - B. \$251,958.76
  - C. \$7800.00
  - D. \$7118.45
  - E. \$237,281.55
- 466.The retail price of an item is \$625.50. This includes a markup of three-quarters of the wholesale cost to the retailer. What is the wholesale cost?
  - A. \$1094.63
  - B. \$469.13
  - C. \$834.00
  - D. \$156.38
  - E. \$357.43

- A. 125%
- B. 45%
- C. 25%
- D. 20%
- E. 15%

468.What sum of money, increased by 7% equals \$187.25?

- A. \$200.36
- B. \$174.14
- C. \$180.25
- D. \$175.00
- E. \$170.00

469. How much is 600 increased by 44%

- A. 840
- B. 644
- C. 864
- D. 1,367
- E. 788

470.What amount, when reduced by 60% equals \$840

A. \$336

- B. \$900
- C. \$1,680
- D. \$1,400
- E. \$2,100

471.After a 5.25% raise, Johnny earned \$19.28 per hour. What was his hourly rate before the raise?

- A. \$18.27
- B. \$18.32
- C. \$20.26
- D. \$18.78
- E. \$10.11
- 472. The population of Enfield has increased by 36% over the last five years. If the current population is 89,244 what was it 5 years ago?
  - A. 65,621
  - B. 53,244
  - C. 19,182
  - D. 57,123
  - E. 70,377

- A. 350
- B. 300
- C. 250
- D. 200
- E. 150

474.What percent of 36 is 90?

- A. 150%
- B. 140%
- C. 175%
- D. 200%
- E. 250%
- 475.A retailer purchases merchandise at 25% below the suggested retail price. If the retailer pays

\$375 for an item, what is the suggested retail price?

- A. \$468.75
- B. \$500.00
- C. \$525.00
- D. \$475.00
- E. \$450.00

- 476.The share value of RipOff Technologies has dropped this year by 85%, to a new low of \$7.50 per share. How much money has been lost per share?
  - A. \$42.50
  - B. \$63.75
  - C. \$8.82
  - D. \$92.50
  - E. \$15.00
- 477.During the last 30 years the price of gasoline has increased by 440%. If the current price per litre is \$0.589, what was it 30 years ago?
  - A. \$0.201
  - B. \$0.149
  - C. \$0.134
  - D. \$0.109
  - E. \$0.037
- 478.Bart purchased three-quarters of a 32% interest in a Swiss Chalet franchise for \$270,000. What is implied value of the franchise?
  - A. \$115,200
  - B. \$632,800
  - C. \$980,750
  - D. \$1,125,000
  - E. \$1,625,000

x + y = 40 -x + y = -20

A. x = 30; y = 10B. x = -10; y = 30C. x = -30; y = -10D. x = -60; y = 20E. x = -60; y = -20

480.Solve for *x* and *y*.

2x + 3y = 73x - y = 5

A. x = 6; y = 2B. x = -2; y = 1C. x = -2; y = -1D. x = 2; y = 1E. x = 2; y = -1 481.The difference between two numbers is 42. If one-half of the larger number is three more than twice the smaller number, what are the two numbers?

A. -12 and -54
B. 12 and 54
C. 16.0 and 58.0
D. 11 and 31

E. -12.5 and 29.5

482.Solve for *x* and *y* in the following pair of equations:

y = -0.2x + 4.2 x - 0.5y = 10A. x = 11; y = 2B. x = 2; y = 11C. x = 11; y = 6.4D. x = 6.45; y = 2.9E. x = 6.4; y = 11

### c2 Key

1. Simplify and collect the like terms: (-p) + (-3p) + (4p)

0

Difficulty: Easy Jerome - Chapter 02 #1 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

2. Simplify and collect the like terms: (5s - 2t) - (2s - 4t)

3s + 2t

Difficulty: Easy Jerome - Chapter 02 #2 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 3. Simplify and collect the like terms:  $4x^2y + (-3x^2y) - (-5x^2y)$ 

 $6x^2y$ 

Difficulty: Easy Jerome - Chapter 02 #3 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

4. Simplify and collect the like terms:  $1 - (7e^2 - 5 + 3e - e^3)$ 

 $e^3 - 7e^2 - 3e + 6$ 

Difficulty: Easy Jerome - Chapter 02 #4 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

5. Simplify and collect the like terms:  $\left(6x^2 - 3xy + 4y^2\right) - \left(8y^2 - 10xy - x^2\right)$ 

 $7x^2 + 7xy - 4y^2$ 

Difficulty: Easy

Jerome - Chapter 02 #5

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra Type: Wora

6. Simplify and collect the like terms: 
$$(7m^3 - m - 6m^2 + 10) - (5m^3 - 9 + 3m - 2m^2)$$

2*m*<sup>3</sup> - 4*m*<sup>2</sup> - 4*m* + 19

Difficulty: Easy Jerome - Chapter 02 #6 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

7. Simplify and collect the like terms: 2(7x - 3y) - 3(2x - 3y)

8*x* + 3*y* 

Difficulty: Easy Jerome - Chapter 02 #7 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

8. Simplify and collect the like terms:  $4(a^2 - 3a - 4) - 2(5a^2 - a - 6)$ 

-6*a*<sup>2</sup> - 10*a* - 4

Jerome - Chapter 02 #8 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

9. Simplify and collect the like terms: 15x - [4 - 2(5x - 6)]

25*x* - 16

Difficulty: Easy Jerome - Chapter 02 #9 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

10. Simplify and collect the like terms: 6a - [3a - 2(2b - a)]

a+4b

Difficulty: Medium Jerome - Chapter 02 #10 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 11. Perform the operation indicated and collect the like terms: 4a(3ab - 5a + 6b)

12*a*<sup>2</sup>*b* - 20*a*<sup>2</sup> + 24*ab* 

Difficulty: Easy Jerome - Chapter 02 #11 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

12. Perform the operation indicated and collect the like terms:  $9k(4 - 8k + 7k^2)$ 

 $36k - 72k^2 + 63k^3$ 

Difficulty: Easy Jerome - Chapter 02 #12 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

13. Perform the operation indicated and collect the like terms:  $-5xy(2x^2 - xy - 3y^2)$ 

 $-10x^3y + 5x^2y^2 + 15xy^3$ 

Difficulty: Easy

Jerome - Chapter 02 #13

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra Type: Wora

14. 
$$-(p^2 - 4pq - 5p)(\frac{2q}{p})$$

Perform the operation indicated and collect the like terms:

 $-2pq + 8q^2 + 10q$ 

Difficulty: Easy Jerome - Chapter 02 #14 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

15. Perform the operation indicated and collect the like terms: (4r - 3t)(2t + 5r)

 $20r^2 - 7rt - 6t^2$ 

Difficulty: Easy Jerome - Chapter 02 #15 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 16. Perform the operation indicated and collect the like terms:  $(3p^2 - 5p)(-4p + 2)$ 

 $-12p^3 + 26p^2 - 10p$ 

Difficulty: Easy Jerome - Chapter 02 #16 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

17. Perform the operation indicated and collect the like terms: 3(a-2)(4a+1)-5(2a+3)(a-7)

2*a*<sup>2</sup> + 34*a* + 99

Difficulty: Easy Jerome - Chapter 02 #17 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

18. Perform the operation indicated and collect the like terms: 5(2x - y)(y + 3x) - 6x(x - 5y)

 $24x^2 + 25xy - 5y^2$ 

Difficulty: Easy

Jerome - Chapter 02 #18

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra Type: Wora

19. Perform the operation indicated and collect the like terms:  $\frac{18x^2}{3x}$ 

6*x* 

Difficulty: Easy Jerome - Chapter 02 #19 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

20. Perform the operation indicated and collect the like terms:  $\frac{\mathbf{6}a^{2}h}{-2ah^{2}}$ 

Difficulty: Easy

Jerome - Chapter 02 #20

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

$$-3\frac{a}{b}$$

21.

 $\frac{x^2y - xy^2}{xy}$ 

Perform the operation indicated and collect the like terms:

х-у

Difficulty: Easy Jerome - Chapter 02 #21 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

 $\frac{+4x+10x^2-6x^3}{-0.5x}$ 22.

Perform the operation indicated and collect the like terms:

 $8 - 20x + 12x^2$ 

Difficulty: Easy Jerome - Chapter 02 #22 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

$$\frac{x^2 - 2x + 3}{4}$$

23.

Difficulty: Easy Jerome - Chapter 02 #23 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

24. Perform the operation indicated and collect the like terms:  $\frac{32a^2b - 8ab + 14ab^2}{2ab}$ 

16*a* - 4 + 7*b* 

Difficulty: Easy Jerome - Chapter 02 #24 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora Perform the operation indicated and collect the like terms:

2*ab* - 3*a*<sup>2</sup>

Difficulty: Easy Jerome - Chapter 02 #25 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

26.

Perform the operation indicated and collect the like terms:

$$\frac{2(1+i)+3(1+i)^2}{6}$$

Difficulty: Medium Jerome - Chapter 02 #26 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra

Type: Wora

 $\frac{120(1+i)^2+180(1+i)^3}{360(1+i)}$ 

 $\frac{4a^{2}b^{3}-6a^{3}b^{2}}{2ab^{2}}$ 

27. Evaluate the following expression for the given value of the variable:

 $3d^2 - 4d + 15$  for d = 2.5

23.75

Difficulty: Easy Jerome - Chapter 02 #27 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

28. Evaluate the following expression for the given value of the variable:

15g - 9h + 3 for g = 14, h = 15

78

Difficulty: Easy Jerome - Chapter 02 #28 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 29. Evaluate the following expression for the given value of the variable:

7x(4y - 8) for x = 3.2, y = 1.5

-44.8

Difficulty: Easy Jerome - Chapter 02 #29 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

30. Evaluate the following expression for the given value of the variables:

/ *Pr* for *P* = \$500, *I* = \$13.75, *r* = 0.11

0.250

Difficulty: Easy Jerome - Chapter 02 #30 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro 31. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent:  $\frac{I}{r}$  for r = 0.095, I = \$23.21,  $I = \frac{283}{365}$ 

\$315.11

Difficulty: Easy Jerome - Chapter 02 #31 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

32. Evaluate the following expression for the given value of the variables and calculate the result  $\underline{\Lambda}^{\star}$ 

accurate to the nearest cent:  $\frac{N}{1-d}$  for N =\$89.10, d = 0.10

\$99.00

Difficulty: Easy Jerome - Chapter 02 #32 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro 33. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent:  $L(1 - d_1)(1 - d_2)(1 - d_3)$  for L =\$490,  $d_1 = 0.125$ ,  $d_2 = 0.15$ ,  $d_3 = 0.05$ 

\$346.22

Difficulty: Medium Jerome - Chapter 02 #33 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

34. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent: P(1+rr) for  $P = $770, r = 0.13, t = \frac{223}{365}$ 

\$776.12

Difficulty: Medium

Jerome - Chapter 02 #34

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

35. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent:  $\frac{S}{1+rt}$  for  $S = $2500, r = 0.085, t = \frac{123}{365}$ 

\$2430.38

Difficulty: Easy Jerome - Chapter 02 #35 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

36. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent:  $\frac{s}{1+n^n}$  for S = \$850, i = 0.0075, n = 6

\$812.73

Difficulty: Easy Jerome - Chapter 02 #36 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 37. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent:  $P(1 )^n$  for P = \$1280, i = 0.025, n = 3

\$1378.42

Difficulty: Easy Jerome - Chapter 02 #37 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

- 38. Simplify the following expression and collect the like terms:
  - $\frac{x}{2}x^2 + \frac{4}{5} \cdot 0.2x^2 \cdot \frac{4}{5}x + \frac{1}{2}$

 $-1.2x^2 - 0.3x + 1.3$ 

Difficulty: Medium Jerome - Chapter 02 #38 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

$$\frac{2x+9}{4}$$
 1.2(x-1)

-0.7x + 3.45

Difficulty: Medium Jerome - Chapter 02 #39 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

40. Simplify the following expression and collect the like terms:

2x	2.016x	x
1.045	3 7	2

1.7419*x* 

Difficulty: Medium Jerome - Chapter 02 #40 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 41. Simplify the following expression and collect the like terms:

$$\frac{8x}{0.5} + \frac{5.5x}{11} + 0.5(4.6x - 17)$$

18.8*x* - 8.5

Difficulty: Medium Jerome - Chapter 02 #41 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

42. Simplify the following expression and collect the like terms. Maintain five-figure accuracy. y

$$y\left(1-0.125 \times \frac{213}{365}\right) + \frac{2y}{1+0.125 \times \frac{88}{365}}$$

2.8685y

Difficulty: Haro

Jerome - Chapter 02 #42

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

43. Simplify the following expression and collect the like terms. Maintain five-figure accuracy.

$$\frac{P}{1+0.095 \times \frac{5}{12}} + 2P\left(1+0.095 \times \frac{171}{365}\right)$$

3.0509P

Difficulty: Haro Jerome - Chapter 02 #43 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

44. Simplify the following expression and collect the like terms. Maintain five-figure

accuracy.  $(1+0.055)^2$   $3h(1+0.055)^3$ 

-2.6243h

Difficulty: Medium

Jerome - Chapter 02 #44

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

45. Simplify the following expression and collect the like terms. Maintain five-figure accuracy.  $k(1 + \gamma k)$ 

$$(1+0.04)^2 + \frac{2\pi}{(1+0.04)^2}$$

2.9307*k* 

Difficulty: Medium Jerome - Chapter 02 #45 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

46. Evaluate the following expression for the given value of the variable:  $\frac{(1+i)^m - 1}{m = 4}$  for i = 0.0225, m = 4

0.093083

Difficulty: Easy Jerome - Chapter 02 #46 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 47. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent: 
$$R\left[\frac{(1+i)^{\prime\prime}-1}{i}\right]$$
 for  $R = $550, i = 0.085, n = 3$ 

\$1794.22

Difficulty: Medium Jerome - Chapter 02 #47 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

48. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent: 
$$R\left[\frac{(1+i)^n - 1}{i}\right](1+i)$$
 for  $R = \$910$ ,  $i = 0.1038129$ ,  $n = 4$ 

\$4687.97

Difficulty: Medium

Jerome - Chapter 02 #48

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

49. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent: 
$$\frac{R}{i} \left[ 1 - \frac{1}{(1+i)^n} \right]$$
 for  $R = $630, i = 0.115, n = 2$ 

#### \$1071.77

Difficulty: Medium Jerome - Chapter 02 #49 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

50. Evaluate the following expression for the given value of the variables and calculate the result

accurate to the nearest cent:  $P(1+rr_1) + \frac{S}{1+rr_2}$  for P = \$470, S = \$390, r = 104 73

$$l_1 = \frac{104}{365}, \quad l_2 = \frac{13}{365}$$

\$864.28

Difficulty: Medium

Jerome - Chapter 02 #50

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

51.	Simplify the following:	a <sup>2</sup> × a <sup>3</sup>
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Difficulty: Easy Jerome - Chapter 02 #51 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

# 52. Simplify the following: $(x^6)(x^{-4})$

**X**<sup>2</sup>

a<sup>5</sup>

Difficulty: Easy Jerome - Chapter 02 #52 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

53. Simplify the following:  $b^{10} \div b^6$ 

*b*<sup>4</sup>

Source: Student text Topic: Algebra Type: Wora

## 54. Simplify the following: $h^7 \div h^{-1}$

*h*<sup>11</sup>

Difficulty: Easy Jerome - Chapter 02 #54 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro

55. Simplify the following:  $(1+i)^4 (1+i)^9$ 

 $(1+t)^{1,t}$ 

Difficulty: Easy Jerome - Chapter 02 #55 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

## 56. Simplify the following: (1+i)(1+i)''

 $\{1+i\}^{n+1}$ 

Difficulty: Easy Jerome - Chapter 02 #56 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

57. Simplify the following:  $(x^4)^7$ 

**X**<sup>28</sup>

Difficulty: Easy Jerome - Chapter 02 #57 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

58. Simplify the following:  $(r^3)^3$ 

У<sup>9</sup>



Difficulty: Easy Jerome - Chapter 02 #60 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro


**x**<sup>2</sup>

Difficulty: Easy Jerome - Chapter 02 #61 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro

 $\frac{(x^5)^6}{x^9}$ 62. Simplify the following:

**X**<sup>21</sup>

Difficulty: Easy Jerome - Chapter 02 #62 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro

63. Simplify the following:  $[2(1+i)]^2$ 

Jerome - Chapter 02 #63 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

 $\left(\frac{1+i}{3i}\right)^3$ 64. Simplify the following:



Difficulty: Easy Jerome - Chapter 02 #64 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

65. Simplify the following:

 $\frac{t^3}{2r}$ 

Difficulty: Medium Jerome - Chapter 02 #65 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

 $\frac{4r^5t^6}{\left(2r^2t\right)^3}$ 



Topic: Algebra

Type: Wora

68. Evaluate the following expression to six-figure accuracy:  $(-27^{2/3})$ 

-9

Jerome - Chapter 02 #68 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

69. Evaluate the following expression to six-figure accuracy:  $7^{3/2}$ 

18.5203

Difficulty: Easy Jerome - Chapter 02 #69 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

70. Evaluate the following expression to six-figure accuracy:  $5^{-3/4}$ 

0.299070

Difficulty: Easy Jerome - Chapter 02 #70 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro 71. Evaluate the following expression to six-figure accuracy:  $(0.001)^{-2}$ 

1,000,000

Difficulty: Easy Jerome - Chapter 02 #71 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

72. Evaluate the following expression to six-figure accuracy:  $0.893^{-1/2}$ 

1.05822

Difficulty: Easy Jerome - Chapter 02 #72 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro

73. Evaluate the following expression to six-figure accuracy:  $(1.0085 \stackrel{5}{\models} (1.0085 \stackrel{3}{\models})$ 

1.07006

Source: Student text Topic: Algebra Type: Wora

74.	Evaluate the following expression to six-figure accuracy:	(1.005 <sup>3</sup> (1.005 ) <sup>-6</sup>
-----	-----------------------------------------------------------	--------------------------------------------

0.985149

Difficulty: Easy Jerome - Chapter 02 #74 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro

75. Evaluate the following expression to six-figure accuracy:

∛1.03

1.00990

Difficulty: Easy Jerome - Chapter 02 #75 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro 76. Evaluate the following expression to six-figure accuracy:  $\sqrt[9]{1.05}$ 

1.00816

Difficulty: Easy Jerome - Chapter 02 #76 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

77. Evaluate the following expression to six-figure accuracy:

 $(4^4)(3^{-3})(-\frac{3}{4})^3$ 

-4

Difficulty: Medium Jerome - Chapter 02 #77 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

78.

Evaluate the following expression to six-figure accuracy:

 $\left[\left(-\frac{3}{4}\right)^2\right]^{-2}$ 

3.16049

Jerome - Chapter 02 #78 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

79.

$$\left[\left(\frac{2}{3}\right)^{3}\left(-\frac{3}{2}\right)^{2}\left(-\frac{3}{2}\right)^{-3}$$

Evaluate the following expression to six-figure accuracy:

-0.197531

Difficulty: Medium

Jerome - Chapter 02 #79

Learning Objective: 02-02 Solve a linear equation in one variable.

Source: Student text

Topic: Algebra

Type: Wora

80.

Evaluate the following expression to six-figure accuracy:  $\left(-\frac{2}{3}\right)^3 + \left(\frac{3}{2}\right)^{-2}$ 

-0.666667

Difficulty: Medium Jerome - Chapter 02 #80 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

Evaluate the following expression to six-figure accuracy:	<u>1.03<sup>16</sup> - 1</u> 0.03

20.1569

Difficulty: Medium Jerome - Chapter 02 #81 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

 $\frac{(1.008\overline{3})^{30}-1}{0.008\overline{3}}$ 

82.

81.

Evaluate the following expression to six-figure accuracy:

33.9235

Difficulty: Medium Jerome - Chapter 02 #82 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

83.	Evaluate the following expression to six-figure accuracy: $\frac{1-1.0225^{-20}}{0.0225}$
	15.9637
	Difficulty: Medium Jerome - Chapter 02 #83 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora
84.	Evaluate the following expression to six-figure accuracy: $\frac{1-(1.00\overline{6})^{-32}}{0.00\overline{5}}$
	28.7312
	Difficulty: Medium
	Jerome - Chapter 02 #84

Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text

Topic: Algebra

Type: Wora

85. Evaluate the following expression to six-figure accuracy:  $(1 + 0.0275)^{1/3}$ 

1.00908

Jerome - Chapter 02 #85 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

86. Evaluate the following expression to six-figure accuracy:  $(1+0.055)^{1/6} - 1$ 

0.00896339

Difficulty: Medium Jerome - Chapter 02 #86 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro

87. Solve the following equation: 10a + 10 = 12 + 9a

*a* = 2

Difficulty: Easy Jerome - Chapter 02 #87 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro 88. Solve the following equation: 29 - 4y = 2y - 7

*y* = 6

Difficulty: Easy Jerome - Chapter 02 #88 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

89. Solve the following equation: 0.5(x - 3) = 20

*x* = 43

Difficulty: Easy
Jerome - Chapter 02 #89
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student text
Topic: Algebra
Type: Wora

90. Solve the following equation:  $\frac{1}{3}(x-2) = 4$ 

x = 14

Difficulty: Easy Jerome - Chapter 02 #90 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text 91. Solve the following equation: y = 192 + 0.04y

*y* = 200

Difficulty: Easy Jerome - Chapter 02 #91 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

92. Solve the following equation: x - 0.025x = 341.25

*x* = 350

Difficulty: Easy Jerome - Chapter 02 #92 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

93. Solve the following equation: 12x - 4(2x - 1) = 6(x + 1) - 3

x = 0.5

Jerome - Chapter 02 #93 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

## 94. Solve the following equation: 3y - 4 = 3(y + 6) - 2(y + 3)

*y* = 8

Difficulty: Easy Jerome - Chapter 02 #94 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

95. Solve the following equation: 8 - 0.5(x + 3) = 0.25(x - 1)

x = 9

Difficulty: Easy Jerome - Chapter 02 #95 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora 96. Solve the following equation: 5(2 - c) = 10(2c - 4) - 6(3c + 1)

*c* = 8

Difficulty: Easy Jerome - Chapter 02 #96 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

97. Solve the following equation: 3.1t + 145 = 10 + 7.6t

t = 30

Difficulty: Easy
Jerome - Chapter 02 #97
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student text
Topic: Algebra
Type: Wora

98. Solve the following equation: 1.25y - 20.5 = 0.5y - 11.5

*y* = 12

Difficulty: Easy Jerome - Chapter 02 #98 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text 99. Solve the following pair of equations. Verify your solution.

x - y = 23x + 4y = 20

(4, 2)

Difficulty: Easy Jerome - Chapter 02 #99 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

100. Solve the following pair of equations. Verify your solution.

*y*-3*x*=11 -4*y*+5*x*=-30

(-2, 5)

Difficulty: Easy Jerome - Chapter 02 #100 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora 101. Solve the following pair of equations. Verify your solution.

4*a*-3*b*=-3 5*a*-*b*=10

(3, 5)

Difficulty: Easy Jerome - Chapter 02 #101 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

102. Solve the following pair of equations. Verify your solution.

7*p* - 3*q* = 23 -2*p* - 3*q* = 5

(2, -3)

Difficulty: Easy Jerome - Chapter 02 #102 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora 103. Solve the following pair of equations. Verify your solution.

$$y = 2x$$
$$7x - y = 35$$

(7, 14)

Difficulty: Easy Jerome - Chapter 02 #103 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

104. Solve the following pair of equations. Verify your solution.

$$\frac{4}{3}g+\frac{3}{2}h=0$$

(-8, 9)

Difficulty: Medium Jerome - Chapter 02 #104 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

*d* = 3*c* - 500 0.7*c* + 0.2*d* = 550

(500, 1000)

Difficulty: Medium Jerome - Chapter 02 #105 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

106. Solve the following pair of equations to three-figure accuracy. Verify your solution. 0.03x +

0.05*y* = 51

0.8x - 0.7y = 140

(700, 600)

Difficulty: Medium Jerome - Chapter 02 #106 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

## 2v + 6w = 1-9w + 10v = 18

$$\left(\frac{3}{2},-\frac{1}{3}\right)$$

Difficulty: Medium Jerome - Chapter 02 #107 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

108. Solve the following pair of equations to three-figure accuracy. Verify your solution.

2.5*a* + 2*b* = 11 8*a* + 3.5*b* = 13

(-1.72, 7.66)

Difficulty: Medium Jerome - Chapter 02 #108 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Word

37x - 63y = 23518x + 26y = 468

(17.0, 6.24)

Difficulty: Medium Jerome - Chapter 02 #109 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

110. Solve the following pair of equations to three-figure accuracy. Verify your solution.

68.9*n* - 38.5*m* = 57 45.1*n* - 79.4*m* = -658

(12.8, 8.00)

Difficulty: Medium Jerome - Chapter 02 #110 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

0.33*e* + 1.67*f* = 292 1.2*e* + 0.61*f* = 377

(250, 125)

Difficulty: Medium Jerome - Chapter 02 #111 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

112. Solve the following pair of equations. Verify your solution.

318*j* - 451*k* = 7.22 -249*j* + 193*k* = -18.79

(0.139, 0.0820)

Difficulty: Medium Jerome - Chapter 02 #112 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora 113. Solve the following equation accurate to the cent:  $\frac{x^2}{1.1^2} + 2x(1.1)^3 =$ \$1000

*x* = \$286.66

Difficulty: Medium Jerome - Chapter 02 #113 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

114. Solve the following equation accurate to the cent:  $\frac{3x}{1.025^6} + x 1.025^8 = $2641.35$ 

*x* = \$694.13

Difficulty: Medium Jerome - Chapter 02 #114 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora 115. Solve the following equation accurate to the cent:

$$\frac{2x}{1.03^7} + x + x(1.03^{10}) = \$1000 + \frac{\$2000}{1.03^4}$$

*x* = \$699.47

Difficulty: Hara Jerome - Chapter 02 #115 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora

116. Solve the following equation accurate to the cent:

 $x(1.05)^3 + $1000 + \frac{x}{1.05^2} = \frac{$5000}{1.05^2}$ 

*x* = \$1892.17

Difficulty: Hara Jerome - Chapter 02 #116 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora 117. Solve the following equation accurate to the cent:

$$v\left(1+0.095 + \frac{84}{365}\right) + \frac{2x}{\left(1+0.095 + \frac{108}{365}\right)} = \$1160.20$$

*x* = \$391.01

Difficulty: Haro Jerome - Chapter 02 #117 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

118. Solve the following equation accurate to the cent:

$$\frac{x}{1+0.115-\frac{78}{365}} + 3x\left(1+0.115+\frac{121}{365}\right) = \$1000\left(1+0.115+\frac{43}{365}\right)$$

*x* = \$247.79

Difficulty: Haro

Jerome - Chapter 02 #118

Learning Objective: 02-03 Solve two linear equations in two variables.

Source: Student text

Topic: Algebra

Type: Wora

119. Use formula (6 - 1), l = Prt, to calculate P if r = 0.05, i =\$6.25, and t = 0.25.

## \$500.00

Difficulty: Easy Jerome - Chapter 02 #119 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

120. Use formula (13 - 1),  $PV = \frac{PMT}{t}$ , to calculate i if PMT = \$900 and PV = \$150,000. (There are several instances in our formulas where a two- or three-letter symbol is used for a variable. This is usually done to make the symbol more suggestive of the quantity it represents. For example, we use *PMT* to represent the amount of each payment in a series of regular payments. The symbol *P* has already been taken to represent another quantity that begins with "*p*.")

0.00600

Difficulty: Easy Jerome - Chapter 02 #120 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro 121. Use formula (6 - 2), S = P(1 + rt), to calculate *P* if r = 0.004, S = \$3626, and t = 9.

\$3500.00

Difficulty: Easy Jerome - Chapter 02 #121 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

122. Use formula (4 - 1), N = L(1 - d), to calculate L if N =\$891 and d = 0.10.

\$9900.00

Difficulty: Easy Jerome - Chapter 02 #122 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

123. Use formula (4 - 1), N = L(1 - d), to calculate *d* if N = \$410.85 and L = \$498.00.

0.175

Difficulty: Easy Jerome - Chapter 02 #123 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text 124. Use formula (6 - 2), S = P(1 + rt), to calculate t if r = 0.0025, S = \$5100, and P = \$5000.

8.00

Difficulty: Easy Jerome - Chapter 02 #124 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

125. Formula (5 - 3), N = (CM)X - FC, contains three two-letter symbols. Use it to calculate CM if N = 15,000, X = 5000, and FC = 60,000.

\$15.00

Difficulty: Easy Jerome - Chapter 02 #125 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro 126. Use formula (5 - 3), N/ = (CM)X - FC, to obtain X if N/ = -\$542.50, CM = \$13.50, and FC = \$18,970.

1365

Difficulty: Easy Jerome - Chapter 02 #126 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

127. Use formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to calculate L if N =\$1468.80,  $d_1 = 0.20$ ,  $d_2 = 0.15$ , and  $d_3 = 0.10$ .

\$2400.00

Difficulty: Easy Jerome - Chapter 02 #127 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro 128. Use formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to calculate  $d_2$  if N = \$70.29, L = \$99.99,  $d_1 = 0.20$ , and  $d_3 = 0.05$ .

0.0750

Difficulty: Easy Jerome - Chapter 02 #128 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

129. Use the formula  $FV = PV(1 + i_1)(1 + i_2)(1 + i_3)$  to determine  $i_1$  if PV = \$1000, FV = \$1094.83,  $i_2 = 0.03$ ,  $i_3 = 0.035$ .

0.0270

Difficulty: Easy Jerome - Chapter 02 #129 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

130. Use formula (10 - 1), 
$$= PMT\left[\frac{(1+i)^n - 1}{i}\right]$$
, to obtain *PMT* if *FV* = \$1508.54, *n* = 4, and *i* = 0.05.

\$350.00

Use formula (10 - 2),  $PV = PMT \left[\frac{1-(1+0^{-n})}{i}\right]$ , to obtain PMT if PV =\$6595.20, n = 20, and i =

\$575.00

0.06.

131.

Difficulty: Easy Jerome - Chapter 02 #131 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra

Type: Wora

132. Rearrange formula (6 - 1), *I* = *Prt*, to isolate t on the left side.

 $t = \frac{I}{Pr}$ 

Difficulty: Easy Jerome - Chapter 02 #132 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Word 133. Rearrange formula (13 - 1),  $PV = \frac{PV}{i}$ , to isolate *i* on the left side.

$$t = \frac{PMT}{PV}$$

Difficulty: Easy Jerome - Chapter 02 #133 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

134. Rearrange formula (4 - 1), N = L(1 - d), to isolate d on the left side.

$$d = 1 - \frac{N}{L}$$

Difficulty: Easy Jerome - Chapter 02 #134 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

135. Rearrange formula (5 - 3), N = (CM)X - FC, to isolate CM on the left side.

$$CM = \frac{NI + FC}{X}$$

Jerome - Chapter 02 #135 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

136. Rearrange formula (5 - 3), NI = (CM)X - FC, to isolate X on the left side.

$$X = \frac{NI + FC}{CM}$$

Difficulty: Easy Jerome - Chapter 02 #136 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

137. Rearrange formula (6 - 2), S = P(1 + rt), to isolate *r* on the left side.

 $r = (S - P) \cdot Pt$ 

Difficulty: Easy Jerome - Chapter 02 #137 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora 138. Rearrange formula (6 - 2), S = P(1 + rt), to isolate t on the left side.

t = (S - P) Pr

Difficulty: Easy Jerome - Chapter 02 #138 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

139. Rearrange formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to isolate  $d_1$  on the left side.

$$d_{1} = 1 - \frac{N}{L(1 - d_2)(1 - d_3)}$$

Difficulty: Easy Jerome - Chapter 02 #139 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Woro

140. Rearrange formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to isolate  $d_3$  on the left side.

$$d_3 = 1 - \frac{N}{L(1 - d_1)(1 - d_2)}$$

## 141. Rearrange the formula $FV = PV(1 + i)^n$ to isolate PV on the left side.

 $PV = FV(\mathbf{l} + t)^{-n}$ 

Difficulty: Easy Jerome - Chapter 02 #141 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

142. Use the formula  $FV = PV(1 + i)^n$  to calculate *i* if PV = \$2000, FV = \$9321.91, and n = 20.

0.0800

Difficulty: Medium Jerome - Chapter 02 #142 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora 143. Use the formula  $PV = FV(1 + i)^{-n}$  to calculate *i* if PV = \$5167.20, FV = \$10,000, and n = 15.

0.0450

Difficulty: Medium Jerome - Chapter 02 #143 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

144. Rearrange the formula  $FV = PV(1 + i)^n$  to isolate *i* on the left side.



Difficulty: Medium Jerome - Chapter 02 #144 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

145. A web site had 2/7 more hits last month than in the same month of the preceding year. If there were 2655 hits last month, how many were there 1 year earlier?

2065
146. The retail price of a pair of skis consists of the wholesale cost to the retailer plus the retailer's markup. If skis retailing for \$712 are marked up by 60% of the wholesale cost, what is that wholesale cost?

\$445.00

Difficulty: Easy Jerome - Chapter 02 #146 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

147. The price tags in Annie's Flower Shop include the 13% Harmonized Sales Tax (HST). How much HST will she report for a plant sold at \$39.55?

\$4.55

Difficulty: Easy Jerome - Chapter 02 #147

Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns.

Source: Student text

Topic: Algebra

Type: Wora

148. A stockbroker's commission on a transaction is 2.5% of the first \$5000 of the transaction amount and 1.5% of the remainder. What was the amount of a transaction that generated a total commission of \$227?

\$11,800

Difficulty: Easy Jerome - Chapter 02 #148 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

149. A caterer has the following price structure for banquets. The first 20 meals are charged the basic price per meal. The next 20 meals are discounted by \$2 each and all additional meals are each reduced by \$3. If the total cost for 73 meals comes to \$1620, what is the basic price per meal?

\$25.00

Difficulty: Easy Jerome - Chapter 02 #149 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro 150. Econocar offers two plans for one-week rentals of a compact car. A rate of \$295 per week includes the first 1000 kilometres. Extra distance costs 15 cents per kilometre. A weekly rate of \$389 allows unlimited driving. Rounded to the nearest kilometre, beyond what driving distance is the unlimited driving plan cheaper?

1627 km

Difficulty: Medium Jerome - Chapter 02 #150 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Word

151. Alicia pays 38% income tax on any additional earnings. She has an opportunity to work overtime at 1.5 times her base wage of \$23.50 per hour. Rounded to the nearest quarter hour, how much overtime must she work to earn enough money (after tax) to buy a canoe that costs \$2750 including sales taxes?

125¾ hours

Difficulty: Medium Jerome - Chapter 02 #151 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 152. Classic Homes has found from experience that there should be 40% as many two-bedroom homes as three-bedroom homes in a subdivision, and twice as many two-bedroom homes as four-bedroom homes. How many homes of each type should Classic build in a new 96-home subdivision?

24 two-bedroom; 60 three-bedroom; 12 four-bedroom

Difficulty: Haro Jerome - Chapter 02 #152 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

153. Broadway Mazda usually spends half as much on radio advertising as on newspaper advertising, and 60% as much on television advertising as on radio advertising. If next year's total advertising budget is \$160,000, how much (rounded to the nearest dollar) should be allocated to each form of advertising?

Radio: \$44,444; TV: \$26,667; Newspaper: \$88,889

Difficulty: Haro Jerome - Chapter 02 #153 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro 154. A city's commercial construction by-laws require five parking spaces for every 100 square metres of retail rental space in a shopping centre. Four percent of the parking spaces must be large spaces for the physically handicapped. Of the remainder, there must be 40% more regular-size spaces than "small-car" spaces. How many parking spaces of each type are required for a 27,500 square metre shopping centre?

55 handicapped; 550 small-car; 770 regular

Difficulty: Hara Jerome - Chapter 02 #154 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

155. Erin has invested in both an equity mutual fund and a bond mutual fund. Her financial advisor told her that her overall portfolio rose in value by 1.1% last year. Erin noted in the newspaper that the equity fund lost 3.3% last year while the bond fund rose 7.7%. To the nearest 0.1%, what percentage of her portfolio was in the equity fund at the beginning of the year?

60%

Difficulty: Haro Jerome - Chapter 02 #155 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 156. Steel is an alloy of iron and nickel. A steel recycling company has two piles of scrap steel. Pile A contains steel with 5.25% nickel content. Pile B contains steel with 2.84% nickel. The company has an order for 32.5 tonnes of steel containing 4.15% nickel. How much scrap steel should be taken from each pile for reprocessing?

17.67 tonnes from A; 14.83 tonnes from B

Difficulty: Haro Jerome - Chapter 02 #156 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

157. The board of directors of Meditronics Inc. has designated 100,000 stock options for distribution to employees and management of the company. Each of three executives is to receive 2000 more options than each of eight scientists and engineers. Each scientist and engineer is to receive 50% more options than each of 14 technicians. How many options will a person in each position receive?

Technician: 3082; Scientist: 4623; Executive: 6623

Difficulty: Hara Jerome - Chapter 02 #157 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 158. Dash Canada offers two long-distance telephone plans. Plan X costs 6.5 cents per minute for calls between 8 a.m. and 6 p.m. weekdays (business hours) and 4.5 cents per minute at other times. Plan Y costs 5.3 cents per minute any time. Above what percentage of business-hour usage will Plan Y be cheaper?

40%

Difficulty: Hara Jerome - Chapter 02 #158 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

159. Quality Grocer makes its own bulk "trail mix" by mixing raisins and peanuts. The wholesale cost of raisins is \$3.75 per kg and the cost of peanuts is \$2.89 per kg. To the nearest 0.1 kg, what amounts of peanuts and raisins should be mixed to produce 50 kg of trail mix with an effective wholesale cost of \$3.20 per kg?

Peanuts: 32.0 kg; Raisins 18.0 kg

Difficulty: Haro Jerome - Chapter 02 #159 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 160. A firm received a bill from its accountant for \$3310, representing a combined total of 41 "billable" hours for both the Certified General Accountant (CGA) and her accounting technician, for conducting the firm's audit. If the CGA charges her time at \$120 per hour and the technician's time at \$50 per hour, how many hours did each work on the audit?

CGA: 18 hours; technician: 23 hours

Difficulty: Medium Jerome - Chapter 02 #160 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Word

161. Joan, Stella, and Sue have agreed to form a partnership. For the original capital investment of \$32,760, Sue agrees to contribute 20% more than Joan, and Joan agrees to contribute 20% more than Stella. How much will each contribute?

Stella = \$9000; Joan = \$10,800; Sue = \$12,960

Difficulty: Medium Jerome - Chapter 02 #161 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 162. The annual net income of the SGR partnership is to be distributed so that Sven receives 30% less than George, and Robert receives 25% more than George. If the past year's net income was \$88,880, what amount should be allocated to each?

George = \$30,128.81; Robert = \$37,661.02; Sven = \$21,090.17

Difficulty: Medium Jerome - Chapter 02 #162 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

163. It takes 20 minutes of machine time to manufacture Product X and 30 minutes of machine time to manufacture Product Y. If the machine operated 47 hours last week to produce a combined total of 120 units of the two products, how many units of Y were manufactured?

42

Difficulty: Medium Jerome - Chapter 02 #163 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Word 164. The tickets for a hockey game cost \$19.00 for the blue section and \$25.50 for the red section. If 4460 tickets were sold for a total of \$93,450, how many seats were sold in each section?

blue = 3120; red = 1340

Difficulty: Medium Jerome - Chapter 02 #164 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

165. The annual dues for the Southern Pines Golf Club are \$2140 for regular members and\$856 for student members. If the total revenue from the dues of 583 members for the past year was \$942,028, how many members did the club have in each category?

238 student members and 345 regular members

Difficulty: Medium Jerome - Chapter 02 #165 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro 166. The Hungry Heifer diner offers an all-you-can-eat buffet at \$12.95 per adult and \$8.95 per child. On a particular day, the diner had total buffet revenue of \$3304.70 from 266 customers. How many of the customers were children?

35

Difficulty: Hara Jerome - Chapter 02 #166 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

167. Tina drove from Calgary to Vancouver, a distance of 1000 km, in 12.3 hours. She drove at 100 km/h on the "open road," but slowed to 50 km/h on urban and curving roads. What distance did she drive at each speed? (Hint: Travelling time at a particular speed 5 Distance/Speed)

230 km at 50 km/h; 770 km at 100 km/h

Difficulty: Hara Jerome - Chapter 02 #167 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro 168. Mr. and Mrs. Chudnowski paid \$1050 to fly with their three children from Winnipeg to Regina. Mrs. Ramsey paid \$610 for herself and two children on the same flight. What were the airfares per adult and per child?

\$270 adult; \$170 child

Difficulty: Haro Jerome - Chapter 02 #168 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

169. Budget Truck Rentals offers short-term truck rentals consisting of an hourly rate plus a perkilometre charge. Vratislav paid \$54.45 for a two-hour rental during which he drove 47 km. Bryn paid \$127.55 for five hours and 93 km driven. What rate did Budget charge per hour and per km?

\$19.00 per hour plus \$0.35 per km

Difficulty: Haro Jerome - Chapter 02 #169 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 170. Buckerfields Garden Supply makes custom fertilizer by mixing appropriate combinations of bulk 6% nitrogen fertilizer with bulk 22% nitrogen fertilizer. How many kilograms of each type should be mixed to make 300 kg of 16% nitrogen fertilizer? (Hint: The weight of nitrogen in the mixture equals the total weight of nitrogen in the two components mixed together.)

112.5 kg of 6% fertilizer; 187.5 kg of 22% fertilizer

Difficulty: Haro Jerome - Chapter 02 #170 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

171. Colby inherited a small savings-bond portfolio consisting of four \$1000 face-value Canada Savings Bonds and six \$1000 face-value Ontario Savings Bonds. In the first year, the portfolio earned \$438 interest. At the end of the first year, Colby cashed in one of the Canada Savings Bonds and two of the Ontario Savings Bonds. In the following year, the remaining bonds earned \$306 interest. What annual rate of interest did each type of bond earn?

CSB: 4.2%; OSB: 4.5%

Difficulty: Hara Jerome - Chapter 02 #171 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro 172. Mr. LeClair and Ms. Bartoli own adjacent hobby farms. They have just received their property tax notices providing the following assessment and tax information:

Owner's name	Assessment on residence	Assessment on land and farm buildings	Total prop- erty tax
Mr. LeClair	\$400,000	\$300,000	\$3870
Ms. Bartoli	\$350,000	\$380,000	\$3774

The regional government applies one tax rate to residences, and a lower tax rate to land with farm buildings. What are these property tax rates (expressed in percent to the nearest 0.01%)?

0.72% on residences; 0.33% on land with buildings

Difficulty: Hara Jerome - Chapter 02 #172 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

173. Product X requires 30 minutes of machining on a lathe, and product Y requires 45 minutes of machining. If the lathe was operated for 60.5 hours last week for machining a combined total of 93 units of Products X and Y, how many units of each product were produced?

37 units of X and 56 units of Y

Source: Student text Topic: Algebra Type: Woro

174. Marichka bought 5 litres of milk and 4 dozen eggs for \$19.51. Lonnie purchased 9 litres of milk and 3 dozen eggs for \$22.98. What were the prices for a litre of milk and a dozen eggs?

\$1.59 per litre and \$2.89 per dozen

Difficulty: Easy Jerome - Chapter 02 #174 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

175. TinyTot School purchases the same amount of milk and orange juice each week. After price increases from \$1.50 to \$1.60 per litre of milk and from \$1.30 to \$1.37 per can of frozen orange juice, the weekly bill rose from \$57.00 to \$60.55. How many litres of milk and cans of orange juice are purchased every week?

25 litres of milk and 15 cans of OJ

Difficulty: Easy Jerome - Chapter 02 #175 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 176. In the first week of July a beer and wine store sold 871 cases of beer and paid refunds on 637 cases of empty bottles, for a net revenue of \$12,632.10. For the following week the net revenue was \$13,331.70 from the sale of 932 cases and the return of 805 cases of empties. What refund did the store pay per case of empty bottles?

\$1.50 per case

Difficulty: Medium Jerome - Chapter 02 #176 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Word

177. As a fundraiser, a local charity sold raffle tickets on a trip to Disney World at \$2 each or three for \$5. In all, 3884 tickets were sold for a total of \$6925. How many people bought tickets at the three for \$5 discount?

843 people

Difficulty: Medium Jerome - Chapter 02 #177 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Word 178. A convenience store sells canned soft drinks at \$4.35 for a six-pack or 90 cents for a single can. If revenue from the sale of 225 cans of soft drinks on a weekend was \$178.35, how many six-packs and how many single cans were sold?

23 six-packs and 87 single cans

Difficulty: Medium Jerome - Chapter 02 #178 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

179. A partnership in a public accounting practice has 7 partners and 12 accounting technicians. Each partner draws the same salary, and each technician is paid the same salary. The partners calculate that if they give the technicians a raise of 8% and if they increase their own salaries by 5%, the gross annual salaries for all accounting personnel will rise from the current \$1,629,000 to \$1,734,750. What are the current annual salaries of a partner and an accounting technician?

partner salary is \$117,000 and the technician salary is \$67,500

Difficulty: Medium Jerome - Chapter 02 #179 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Word 180. A manufacturing firm pays monthly salaries of \$5100 to each production worker and \$4200 to each assembly worker. As the economy drops into a recession, the firm decides to reduce its total monthly manufacturing payroll from \$380,700 to \$297,000 by laying off 20% of its production workers and 25% of its assembly workers. How many layoffs will there be from each of the assembly and production divisions?

9 production workers and 9 assembly workers will be laid off

Difficulty: Haro Jerome - Chapter 02 #180 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

181. Mr. Parker structured his will so that each of his four children will receive half as much from the proceeds of his estate as his wife, and each of 13 grandchildren will receive one-third as much as each child. After his death, \$759,000 remains after expenses and taxes for distribution among his heirs. How much will each child and grandchild receive?

each child = \$73,451.62; each grandchild = \$24,483.87

Difficulty: Haro Jerome - Chapter 02 #181 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 182. To coordinate production in a three-stage manufacturing process, Stage B must be assigned 60% more workers than Stage A. Stage C requires three-quarters as many workers as Stage B. How should the foreman allocate 114 workers among the three stages?

Stage A = 30; Stage B = 48; Stage C = 36

Difficulty: Haro Jerome - Chapter 02 #182 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

183. Fred has centralized the purchasing and recordkeeping functions for his three pharmacies in a single office. The annual costs of the office are allocated to the three stores. The Hillside store is charged \$1000 less than twice the charge to the Barnett store. The Westside store is charged \$2000 more than the Hillside store. What is the charge to the Westside store if the cost of operating the central office for a year is \$27,600?

\$12,040

Difficulty: Haro Jerome - Chapter 02 #183 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 184. \$100,000 is to be distributed under a firm's profit-sharing plan. Each of 3 managers is to receive 20% more than each of 26 production workers. How much will each manager and production worker receive?

Each worker = \$3378.38; each manager = \$4054.05

Difficulty: Haro Jerome - Chapter 02 #184 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

185. What is the percent Rate if a quantity is four times the size of the Base?

400%

Difficulty: Easy Jerome - Chapter 02 #185 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Concept

186. What is the percent Rate if a quantity is from of the Base?

0.1%

Jerome - Chapter 02 #186 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Concept

## 187. If the percent Rate is 1000%, what multiple is the Portion of the Base?

10 times

Difficulty: Easy Jerome - Chapter 02 #187 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Concept

188. If the percent Rate is 0.01%, what fraction is the Portion of the Base?

1/10,000

Difficulty: Easy Jerome - Chapter 02 #188 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Concept 189. Calculate 1.75% of \$350 accurate to the cent.

\$6.13

Difficulty: Easy Jerome - Chapter 02 #189 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

<sup>190.</sup> Calculate  $6.\overline{6}\%$  of \$666.66 accurate to the cent.

\$44.44

Difficulty: Easy Jerome - Chapter 02 #190 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

191. What percent is \$1.50 of \$11.50? Calculate to three-figure accuracy.

13.0%

192. What percent is 88¢ of \$44? Calculate to three-figure accuracy.

2.00%

Difficulty: Easy Jerome - Chapter 02 #192 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

193. \$45 is 60% of what amount accurate to the cent?

\$75.00

Difficulty: Easy Jerome - Chapter 02 #193 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

194. \$69 is 30% of what amount accurate to the cent?

\$230.00

Jerome - Chapter 02 #194 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

## 195. What amount is 233.3% of \$75 accurate to the cent?

#### \$174.98

Difficulty: Easy Jerome - Chapter 02 #195 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

#### 196. What amount is 0.075% of \$1650 accurate to the cent?

\$1.24

Difficulty: Easy Jerome - Chapter 02 #196 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora 197. \$134 is what percent of \$67? Calculate to three-figure accuracy.

200%

Difficulty: Easy Jerome - Chapter 02 #197 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

198. \$1.34 is what percent of \$655? Calculate to three-figure accuracy.

0.205%

Difficulty: Easy Jerome - Chapter 02 #198 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

199. 150% of \$60 is what amount accurate to the cent?

\$90.00

Difficulty: Easy Jerome - Chapter 02 #199 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text

# 200. 0.583% of \$1500 is what amount accurate to the cent?

\$8.75

Difficulty: Easy Jerome - Chapter 02 #200 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

201. 7½% of what amount is \$1.46 accurate to the cent?

\$19.47

Difficulty: Easy Jerome - Chapter 02 #201 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

202. 12<sup>3</sup>/<sub>4</sub>% of what amount is \$27.50 accurate to the cent?

\$215.69

Jerome - Chapter 02 #202 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

203. What percent of \$950 is \$590? Calculate to three-figure accuracy.

62.1%

Difficulty: Easy Jerome - Chapter 02 #203 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

204. What percent of \$590 is \$950? Calculate to three-figure accuracy.

161%

Difficulty: Easy Jerome - Chapter 02 #204 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora \$105.26

Difficulty: Easy Jerome - Chapter 02 #205 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

206. 8<sup>1</sup>/<sub>3</sub>% of what amount is \$10 accurate to the cent?

\$120.00

Difficulty: Easy Jerome - Chapter 02 #206 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

207. 30 m is what percent of 3 km? Calculate to three-figure accuracy.

1.00%

Difficulty: Easy Jerome - Chapter 02 #207 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text 208. 500 grams is what percent of 2.8 kilograms? Calculate to three-figure accuracy.

17.9%

Difficulty: Easy Jerome - Chapter 02 #208 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

209. How much is  $\frac{1}{2}$ % of \$10 accurate to the cent?

\$0.05

Difficulty: Easy Jerome - Chapter 02 #209 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

210. 0.75% of \$100 is what amount accurate to the cent?

\$0.75

Jerome - Chapter 02 #210 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

#### 211. \$180 is 120% of what amount accurate to the cent?

\$150.00

Difficulty: Easy Jerome - Chapter 02 #211 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

212. \$559.35 is 113% of what amount accurate to the cent?

495.00

Difficulty: Easy Jerome - Chapter 02 #212 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora \$593.78

Difficulty: Easy Jerome - Chapter 02 #213 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

214. 0.0505% of \$50,000 is what amount accurate to the cent?

\$25.25

Difficulty: Easy Jerome - Chapter 02 #214 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

215. \$281.25 is 225% of what amount accurate to the cent?

\$125.00

Difficulty: Easy Jerome - Chapter 02 #215 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text 216. 350% of what amount is \$1000 accurate to the cent?

\$285.71

Difficulty: Easy Jerome - Chapter 02 #216 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

217. \$10 is 0.5% of what amount accurate to the cent?

\$2000.00

Difficulty: Easy Jerome - Chapter 02 #217 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

218. 1.25 is  $\frac{3}{4}$ % of what amount accurate to the cent?

\$166.67

219. Cecilia and Nathan estimate their total cost for a vacation in Australia to be \$14,775.

a) What percentage is this cost of their combined gross monthly income of \$8775? Calculate to three-figure accuracy.

b) If 72% of their gross monthly income is already consumed by rent, taxes, car payments, and other regular living expenses, what percentage is the trip's cost of their remaining annual disposable income? Calculate to three-figure accuracy.

a. 168% b. 50.1%

Difficulty: Medium Jerome - Chapter 02 #219 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

220. In a one-month period, a convenience store had sales of \$65,560 from its gas pumps and sales of \$36,740 from other in-store products. What percent of total sales were from gasoline? Calculate to three-figure accuracy.

64.1% of total sales

221. A 540ml can of K-9 Diet dog food contains 28% protein, 15.5% fat and 6% fiber.

a) How many ml of other ingredients are there in the can?

b) The recommended serving for a small dog is 5/8 of a can. How many ml of protein are in one small dog serving?

a) 272.7 ml; b) 94.5 ml

Difficulty: Medium Jerome - Chapter 02 #221 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

222. A provincial Minister of Education recently announced that his government's forecast expenditure of \$2.68 billion on education next year represents 23.5% of the provincial budget. Rounded to the nearest million dollars, what is the province's total budget for the next year?

\$11404 billion

Difficulty: Medium Jerome - Chapter 02 #222 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora 223. Unusually high snowfall during the past winter resulted in Brockton's costs for snow plowing and removal to reach \$320,200. This represents 127% of its budgeted cost. Rounded to the nearest \$100, what amount did Brockton budget for snow clearance?

\$252,100 (to the nearest \$100)

Difficulty: Medium Jerome - Chapter 02 #223 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

224. The royalty rate performing artists receive from songs downloaded from Apple iTunes is 5.7%. If a band received royalties from Apple of \$99,736.41 for a year, how many song downloads at \$0.99 each did the band have for that year?

\$1,767,436

Difficulty: Medium Jerome - Chapter 02 #224 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora 225. Your regular workweek is 7.5 hours per day for five days. If you do not work on seven public holidays and you receive two weeks vacation, what percentage of the total hours in a year are you actually at work? Assume that a year has exactly 52 weeks. Calculate to three-figure accuracy.

20.9%

Difficulty: Medium Jerome - Chapter 02 #225 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

226. In the month of December, Bernie's Bargain Barn had sales of \$9,820 in their clothing department, \$4,025 in their shoe department and \$1830 in accessories. If 17% of the merchandise purchased from the clothing department was returned, 8% was returned from the shoe department and 3% was returned in accessories, what percent of the total revenue for December were the returns if full refunds were given on all merchandise?

13.05%

Difficulty: Medium Jerome - Chapter 02 #226 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora
227. Ivory hand-soap is advertised as being <sup>99</sup><sup>44</sup> pure. (It floats!) How many milligrams of impurities are in a 150-gram bar of Ivory soap?

840 mg

Difficulty: Medium Jerome - Chapter 02 #227 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

228. An online discount broker charges a transaction fee of \$30 plus an additional 3 cents per share. A full-service broker charges a commission rate of 2.4% of the total dollar value of a stock transaction. Suppose you purchase 200 shares of the Bank of Nova Scotia at \$55.40 per share. What percentage are the total fees charged by the online discount broker of the commission you would pay the full-service broker? Calculate to three-figure accuracy.

13.5%

Difficulty: Medium Jerome - Chapter 02 #228 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora 229. A full-service broker charges a commission rate of 2.2% of the total dollar value of a stock transaction. A discount broker charges a transaction fee of \$25 plus an additional five cents per share. Suppose you purchase 800 shares of Talisman Energy at \$21.75 per share. What percentage of the commission fee charged by the full-service broker would you save by using the discount broker? Calculate to three-figure accuracy.

83.0%

Difficulty: Haro Jerome - Chapter 02 #229 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

- 230. A province's progressive income tax rates are structured as follows: 16% tax on the first \$15,000 of taxable income, 26% on the next \$20,000, 35% on the next \$40,000, and 45% on any additional taxable income. Calculating to three-figure accuracy, what percentage is an individual's total income tax of his (taxable) income if his taxable income for a year is:
  - a) \$33,000?
  - b) \$66,000?
  - c) \$99,000?

a. 21.5%; b. 28.0%; c. 32.7%

231. In 2009, Canada's population was 33,700,000 and Japan's population was 127,600,000. Canada's land area is 9,093,500 square kilometres but Japan's area is only 377,835 square kilometres. To the nearest 0.01%, what percentage was Canada's population density (people per square kilometre) of Japan's population density in 2009? Calculate to three-figure accuracy.

1.10% of Japan's population density

Difficulty: Haro Jerome - Chapter 02 #231 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

232. A property sold for 250% of what the vendors originally paid for it. What was that original price if the recent selling price was \$210,000?

\$84,000

Difficulty: Medium Jerome - Chapter 02 #232 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro 233. The Calgary Flames hockey team announced that its season's ticket sales of 11,542 represents 67.50% of the Scotiabank Saddledome's seating capacity. Rounded to the nearest 100, how many seats were not sold to season's ticket holders?

5600 (rounded to the nearest 100)

Difficulty: Medium Jerome - Chapter 02 #233 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

234. Studies have shown that the average adult male requires 7.5 hours of sleep a night and females require 20 minutes more than males. If the average life expectancy in Canada is 82.7 years for women and 78 years for men, what percentage are the male waking hours of a female's waking hours for a lifetime?

96.26%

Difficulty: Medium Jerome - Chapter 02 #234 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora 235. Stan is a real estate salesperson. He receives 60% of the 4.8% commission that the real estate agency charges on sales. If his income for the past year was \$150,480, what was the dollar value of his sales for the year?

\$5,225,000

Difficulty: Medium Jerome - Chapter 02 #235 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

236. A stockbroker is paid 45% of the commission her firm charges her clients. If she personally received \$134.55 on a \$11,500 transaction, what is the firm's commission rate? Calculate to three-figure accuracy.

2.60%

Difficulty: Medium Jerome - Chapter 02 #236 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora 237. A mortality rate indicates the fraction of individuals in a population who are expected to die in the next year.

a. If the mortality rate among 35-year-old males is 0.34%, what is the expected number of deaths per year among a province's total of 50,000 such males?b. If 35-year-old males constitute 0.83% of the overall population in a city of 1.45 million, how

many deaths of such males are expected in that city in a year?

a) 170 b) 41

Difficulty: Medium Jerome - Chapter 02 #237 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Word

238. Calculate the missing value: Initial Value = \$95; Final Value = \$100; Percent Change =?Calculate the answer accurate to the nearest 0.01%.

5.26%

Difficulty: Easy Jerome - Chapter 02 #238 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 239. Calculate the missing value: Initial Value = \$100; Final Value = \$95; Percent Change =?Calculate the answer accurate to the nearest 0.01%.

-5.00%

Difficulty: Easy Jerome - Chapter 02 #239 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

240. Calculate the missing value: Initial Value = 35kg; Final Value = 135kg; Percent Change =?Calculate the answer accurate to the nearest 0.01%.

285.71%

Difficulty: Easy Jerome - Chapter 02 #240 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 241. Calculate the missing value: Initial Value = 135kg; Final Value = 35kg; Percent Change =?Calculate the answer accurate to the nearest 0.01%.

-74.07%

Difficulty: Easy Jerome - Chapter 02 #241 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

242. Calculate the missing value: Initial Value = 0.11; Final Value = 0.13; Percent Change =?Calculate the answer accurate to the nearest 0.01%.

18.18%

Difficulty: Easy Jerome - Chapter 02 #242 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 243. Calculate the missing value: Initial Value = 0.095; Final Value = 0.085; Percent Change =?Calculate the answer accurate to the nearest 0.01%.

-10.53%

Difficulty: Easy Jerome - Chapter 02 #243 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

244. Calculate the missing value: Initial Value = \$134.39; Final Value =? Percent Change = -12%.Calculate the answer accurate to the cent.

\$118.26

Difficulty: Easy Jerome - Chapter 02 #244 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Word

245. Calculate the missing value: Initial Value = 112g; Final Value =? Percent Change = 112%.

237.44g

Jerome - Chapter 02 #245 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

246. Calculate the missing value: Initial Value = 26.3cm; Final Value =? Percent Change = 300%

105.2cm

Difficulty: Easy Jerome - Chapter 02 #246 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

247. Calculate the missing value: Initial Value = 0.043; Final Value =? Percent Change = -30%

0.0301

Difficulty: Easy Jerome - Chapter 02 #247 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 248. Calculate the missing value: Initial Value =? Final Value = \$75; Percent Change = 200%.Calculate the answer accurate to the cent.

\$25.00

Difficulty: Easy Jerome - Chapter 02 #248 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

249. Calculate the missing value: Initial Value =? Final Value = \$75; Percent Change = -50%Calculate the answer accurate to the cent.

\$150.00

Difficulty: Easy Jerome - Chapter 02 #249 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

250. \$100 is what percent more than \$90? Calculate the answer accurate to the nearest 0.01%.

11.11%

Jerome - Chapter 02 #250 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

251. \$100 is what percent less than \$110? Calculate the answer accurate to the nearest 0.01%.

-9.09%

Difficulty: Easy Jerome - Chapter 02 #251 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

252. What amount when increased by 25% equals \$100? Calculate the answer accurate to the cent.

\$80.00

Difficulty: Easy Jerome - Chapter 02 #252 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 253. What sum of money when increased by 7% equals \$52.43? Calculate the answer accurate to the cent.

\$49.00

Difficulty: Easy Jerome - Chapter 02 #253 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

254. \$75 is 75% more than what amount? Calculate the answer accurate to the cent.

\$42.86

Difficulty: Easy Jerome - Chapter 02 #254 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

255. How much is \$56 increased by 65%? Calculate the answer accurate to the cent.

\$92.40

Source: Student text Topic: Algebra Type: Wora

256. \$754.30 is what percent less than \$759.00? Calculate the answer accurate to the nearest 0.01%.

-0.62%

Difficulty: Easy Jerome - Chapter 02 #256 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

257. 77,787 is what percent more than 77,400? Calculate the answer accurate to the nearest 0.01%.

0.50%

Difficulty: Easy
Jerome - Chapter 02 #257
Learning Objective: 02-07 Solve problems involving percent change.
Source: Student text
Topic: Algebra
Type: Wora

258. How much is \$75 increased by 75%? Calculate the answer accurate to the cent.

\$131.25

Difficulty: Easy Jerome - Chapter 02 #258 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

259. \$100 is 10% less than what number? Calculate the answer accurate to the cent.

\$111.11

Difficulty: Easy Jerome - Chapter 02 #259 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

260. What amount after a reduction of 20% equals \$100? Calculate the answer accurate to the cent.

\$125.00

Source: Student text Topic: Algebra Type: Wora

## 261. What amount after a reduction of 25% equals \$50? Calculate the answer accurate to the cent.

\$66.67

Difficulty: Easy Jerome - Chapter 02 #261 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

262. What amount after a reduction of 16.6 % equals \$549? Calculate the answer accurate to cent.

\$658.80

Difficulty: Easy Jerome - Chapter 02 #262 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 263. How much is \$900 after a decrease of 90%? Calculate the answer accurate to the cent.

\$90.00

Difficulty: Easy Jerome - Chapter 02 #263 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

264. How much is \$102 after a decrease of 2%? Calculate the answer accurate to the cent.

\$99.96

Difficulty: Easy Jerome - Chapter 02 #264 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Word

265. How much is \$102 after a decrease of 100%? Calculate the answer accurate to the cent.

\$0.00

Difficulty: Easy Jerome - Chapter 02 #265 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text 266. \$750 is what percent more than \$250? Calculate the answer accurate to the nearest 0.01%.

200.00%

Difficulty: Easy Jerome - Chapter 02 #266 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

267. \$250 is what percent less than \$750? Calculate the answer accurate to the nearest 0.01%.

-66.67%

Difficulty: Easy Jerome - Chapter 02 #267 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

268. How much is \$10,000 increased by 3/4%? Calculate the answer accurate to the cent.

\$10,075.00

Jerome - Chapter 02 #268 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

269. How much is \$1045 decreased by 0.5%? Calculate the answer accurate to the cent.

\$1039.78

Difficulty: Easy Jerome - Chapter 02 #269 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

270. What amount when increased by 150% equals \$575? Calculate the answer accurate to the cent.

\$230.00

Difficulty: Easy Jerome - Chapter 02 #270 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 271. What amount after being increased by 210% equals \$465? Calculate the answer accurate to the cent.

\$150.00

Difficulty: Easy Jerome - Chapter 02 #271 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

272. How much is \$150 after an increase of 150%? Calculate the answer accurate to the cent.

\$375.00

Difficulty: Easy Jerome - Chapter 02 #272 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

273. The total cost of a coat (including HST of 13% of the retail price) is \$281.37. What is the retailt price of the coat?

\$249.00

274. On the purchase of a plasma TV, the total cost to the customer (including 5% GST and 7% PST) came to \$2797.76. How much GST and how much PST did the customer pay?

GST = \$124.90; PST = \$174.86

Difficulty: Easy Jerome - Chapter 02 #274 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

275. In 2009, Canada's population reached 33,710,000, a level that was 10.56% higher than ten years earlier. Rounded to the nearest 10,000, what was the population figure for 1999?

30,490,000

Difficulty: Medium Jerome - Chapter 02 #275 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

- 276. Becker Tools sold 32,400 hammers at an average price of \$15.10 in Year 1 and 27,450 hammers at an average price of \$15.50 in Year 2. What was the percent change from Year 1 to Year 2 in:
  - a. The number of hammers sold?
  - b. The average selling price?
  - c. The revenue from the sale of hammers?

a) -15.28%; b) 2.65%; c) -13.03%

Difficulty: Easy Jerome - Chapter 02 #276 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

- 277. An investor purchased shares of Digger Resources at a price of \$0.55 per share. One year later, the shares traded at \$1.55, but they fell back to \$0.75 by the end of the second year after the date of purchase. Calculate the percent change in the share price accurate to the nearest 0.01%:
  - a. In the first year
  - b. In the second year
  - c. Over both years

a) 181.82%; b) -51.61%; c) 36.36%

278. What was the percent change in unit price when the regular size of Lily soap bars dropped from 100 g to 90 g (with no change in the price per bar)? Calculate the answer accurate to the nearest 0.01%.

11.11% increase

Difficulty: Medium Jerome - Chapter 02 #278 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

279. After Island Farms increased the container size for its premium ice cream from 1.65 L to 2.2 L, the retail price increased from \$5.49 to \$7.98. What was the percent change in the unit price? Calculate the answer accurate to the nearest 0.01%.

9.02%

Difficulty: Medium Jerome - Chapter 02 #279 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 280. Fluffy laundry detergent reduced its regular size from 3.6 kg to 3 kg. The retail price dropped from \$7.98 to \$6.98. What was the percent change in the unit price? Calculate the answer accurate to the nearest 0.01%.

4.96% increase

Difficulty: Medium Jerome - Chapter 02 #280 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

281. The retail price of Paradise Island cheddar cheese dropped from \$10.98 to \$9.98 when the package size was reduced from 700 g to 600 g. What was the percent change in the unit price? Calculate the answer accurate to the nearest 0.01%.

6.04%

Difficulty: Medium Jerome - Chapter 02 #281 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 282. The Edmonton Real Estate Board reports that the average selling price of homes last month in the greater Edmonton area was \$338,500, an increase of 8.7% over the past year. Rounded to the nearest \$100, what was the average selling price one year ago?

\$311,400.

Difficulty: Medium Jerome - Chapter 02 #282 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

283. Mountain Sports is advertising "30% Off All Skiing Equipment" in its Spring Clearance Sale. On ski boots marked down to \$348.60, what is the regular price?

498.00.

Difficulty: Medium Jerome - Chapter 02 #283 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 284. Last year, Canada's exports to the U.S. exceeded imports from the U.S. by 23%. By what percentage were the United States' exports to Canada less than its imports from Canada? Calculate the answer accurate to the nearest 0.01%.

18.70%

Difficulty: Medium Jerome - Chapter 02 #284 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

285. For the final seven months of 2013, Apple Computer projects sales of 55.0 million iPhones. This would outpace the projected sales of the Galaxy S4 phones by 35%. What are the projected sales for the Galaxy phone for the same period (rounded to the nearest 10,000)?

40,740,100

Difficulty: Medium Jerome - Chapter 02 #285 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 286. Projected sales for the iPhone in 2012 were 116.4 million which represented an increase of 17.2% on phones sold in 2011. How many iPhones were sold in 2011(rounded to the nearest 10,000)?

99,317,400

Difficulty: Medium Jerome - Chapter 02 #286 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

287. Mutual Fund A charges an annual management fee of 2.38% of money under management. The corresponding management fee for Mutual Fund B is 1.65%. On the same invested amount, what percentage more fees will you pay to Fund A than to Fund B? Calculate the answer accurate to the nearest 0.01%.

44.24%

Difficulty: Medium Jerome - Chapter 02 #287 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 288. In January of 2014, the Nova Scotia government reduced the HST rate from 15% to 14%. What was the resulting percent reduction in the dollar amount of HST consumers paid on any item? Calculate the answer accurate to the nearest 0.01%.

-16.67%.

Difficulty: Medium Jerome - Chapter 02 #288 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

289. In April of 2013, Facebook had 164,130,000 unique visitors, up 6.18% from a year earlier. What was the absolute increase, year-over-year, in the number of unique visitors (rounded to the nearest 10,000)?

9,553,000 (rounded to the nearest 10,000)

Difficulty: Medium Jerome - Chapter 02 #289 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 290. The price of the shares of Nadir Explorations Ltd. fell by 76% in the past year, to the current price of \$0.45 per share. In dollars and cents, how much did the price of each share drop in the past year?

\$1.43

Difficulty: Medium Jerome - Chapter 02 #290 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

291. A piece of machinery has depreciated by 55% of its original purchase price during the past four years, to the current value of \$24,300. What is the dollar amount of the total depreciation during the last four years?

\$29,700

Difficulty: Medium Jerome - Chapter 02 #291 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 292. General Paint and Cloverdale Paint normally offer the same prices. For its Spring Specials Sale, General Paint has marked down the price of outdoor latex paint by 30%. What percentage more will you pay if you buy paint at the regular price at Cloverdale? Calculate the answer accurate to the nearest 0.01%.

42.86% more

Difficulty: Medium Jerome - Chapter 02 #292 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

293. Sears reported that its sales in January were down 17.4% from its sales in December. What percentage were December sales of January sales? Calculate the answer accurate to the nearest 0.01%.

121.07%

Difficulty: Medium Jerome - Chapter 02 #293 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 294. If operating expenses are 40% of revenue, by what percentage does revenue exceed operating expenses?

150%

Difficulty: Medium Jerome - Chapter 02 #294 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

- 295. A company has 50% less equity financing than debt financing. What percentage is the debt of the equity? What percentage more debt financing does the company have than equity financing?
  - 2:1 Debt to Equity ratio; therefore, 100%

Difficulty: Medium Jerome - Chapter 02 #295 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 296. Elegance shampoo has a suggested retail price of \$4.49 for its 500 ml bottle. The manufacturer of the shampoo wants to increase the unit retail price by 10% at the same time that it reduces the container size to 425 ml. What should be the suggested retail price of the smaller bottle?

\$4.20

Difficulty: Haro Jerome - Chapter 02 #296 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

297. The manufacturer of Caramalt chocolate bars wants to implement a 7.5% increase in the unit retail price along with a reduction in the bar size from 100 g to 80 g. If the current retail price of a 100-g bar is \$1.15, what should be the price of an 80-g bar?

\$0.99

Difficulty: Haro Jerome - Chapter 02 #297 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 298. Goldfield Resources' share price fell by \$4 in Year 1 and then rose by \$4 in Year 2. If the share price was \$6 at the end of Year 1, what was the percent change in share price each year? Calculate the answer accurate to the nearest 0.01%.

Year 1: -40.0%; Year 2: 66.67%

Difficulty: Easy Jerome - Chapter 02 #298 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

299. If the Canadian dollar is worth 6.5% less than the U.S. dollar, by what percentage does the U.S. dollar exceed the value of the Canadian dollar? Calculate the answer accurate to the nearest 0.01%.

6.95% more

Difficulty: Medium Jerome - Chapter 02 #299 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 300. The owner listed a property for 140% more than she paid for it 12 years ago. After receiving no offers during the first 3 months of market exposure, she dropped the list price by 10%, to \$172,800. What was the original price that the owner paid for the property?

\$80,000

Difficulty: Medium Jerome - Chapter 02 #300 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

301. A car dealer normally lists new cars at 22% above cost. A demonstrator model was sold for\$17,568 after a 10% reduction from the list price. What amount did the dealer pay for this car?

\$16,000

Difficulty: Medium Jerome - Chapter 02 #301 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 302. If the denominator of a fraction decreases by 20% and the numerator remains unchanged, by what percentage does the value of the fraction change?

25.0% increase

Difficulty: Haro Jerome - Chapter 02 #302 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

303. The Hampton District school board decided to reduce the number of students per teacher next year by 15%. If the number of students does not change, by what percentage must the number of teachers be increased?

17.65%

Difficulty: Medium Jerome - Chapter 02 #303 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro 304. The Lightning laser printer prints 30% more pages per minute than the Reliable laser printer. What percentage less time than the Reliable will the Lightning require for long print jobs? Calculate the answer accurate to the nearest 0.01%.

23.08% less

Difficulty: Hara Jerome - Chapter 02 #304 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

305. If the euro is worth 39% more than the Canadian dollar, how much less (in percentage terms) is the Canadian dollar worth than the euro? Calculate the answer accurate to the nearest 0.01%.

28.06 % less

Difficulty: Haro Jerome - Chapter 02 #305 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro
306. A hospital can increase the dollar amount budgeted for nurses' overtime wages during the next year by only 3%. The nurses union has just won an 5% hourly rate increase for the next year. By what percentage must the hospital cut the number of overtime hours in order to stay within budget? Calculate the answer accurate to the nearest 0.01%.

1.90%

Difficulty: Haro Jerome - Chapter 02 #306 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Woro

307. Multiply and collect the like terms: 4(3a + 2b)(2b - a) - 5a(2a - b)

-22a<sup>2</sup> + 21ab + 16b<sup>2</sup>

Difficulty: Easy Jerome - Chapter 02 #307 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora \$34.58

Difficulty: Easy Jerome - Chapter 02 #308 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

309. What amount reduced by 80% leaves \$100?

\$500.00

Difficulty: Easy Jerome - Chapter 02 #309 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

310. What amount reduced by 15% equals \$100?

\$117.65

Difficulty: Easy Jerome - Chapter 02 #310 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text 311. What is \$47.50 increased by 320%?

\$199.50

Difficulty: Easy Jerome - Chapter 02 #311 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

312. What amount when decreased by 62% equals \$213.56?

\$562.00

Difficulty: Easy Jerome - Chapter 02 #312 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

313. What amount when increased by 125% equals \$787.50?

\$350.00

Jerome - Chapter 02 #313 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

## 314. What amount is 30% less than \$300?

## \$210.00

Difficulty: Easy Jerome - Chapter 02 #314 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

315. Simplify and collect the like terms:  $\frac{9y-7}{3} - 2.3(y-2)$ 

Difficulty: Medium

Jerome - Chapter 02 #315

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

 $P\left(1+0.095-\frac{135}{365}\right)+\frac{2P}{\left(1+0.095-\frac{75}{365}\right)}$ Simplify and collect the like terms:

2.996843P

Difficulty: Medium Jerome - Chapter 02 #316 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

317. Simplify and combine the like terms: 6(4y - 3)(2 - 3y) - 3(5 - y)(1 + 4y)

 $-60y^2 + 45y - 51$ 

Difficulty: Easy Jerome - Chapter 02 #317 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro

318. Simplify and combine the like terms: 
$$\frac{5b-4}{4} - \frac{25-b}{1.25} + \frac{7}{8}b$$

2.925*b* - 21

## Jerome - Chapter 02 #318

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

319.

fy and combine the like terms: 
$$\frac{x^2}{1+0.085 + \frac{53}{365}} + 2x \Big| 1+0.085 + \frac{151}{365} \Big|$$

Simplify and combine the like terms:

3.05587*x* 

Difficulty: Medium

Jerome - Chapter 02 #319

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

320.

$$\frac{96nm^2 - 72n^2m^2}{48n^2m}$$

Simplify and combine the like terms:

$$2\frac{m}{n}-1.5m$$

Difficulty: Easy Jerome - Chapter 02 #320 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

321.  
Evaluate accurate to the cent:  
D.09, and 
$$t = \frac{93}{365}$$
.  
\$4505.14  
Difficulty: Medium  
Jerome - Chapter 02 #321  
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.  
Source: Student text  
Topic: Algebra

Type: Wora

322. Evaluate accurate to the cent:  $L(1-d_1(1-d_2)(1-d_3))$  for L =

 $340, d_1 = 0.15, d_2 = 0.08, d_3 = 0.05$ 

\$252.59

Difficulty: Easy Jerome - Chapter 02 #322 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Woro 323.

Evaluate accurate to the cent: 
$$\frac{R}{i} \left[ 1 - \frac{1}{(1+i)^n} \right]$$
 for  $R = $575, i = 0.085, n = 3$ 

\$1468.56

Difficulty: Easy

Jerome - Chapter 02 #323

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

324. 
$$\frac{(-3x^2)^3(2x^{-2})}{5x^5}$$

Simplify:

 $\frac{9}{x}$ 

Difficulty: Medium Jerome - Chapter 02 #324 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

325. 
$$\frac{(-2a^3)^{-2}(4b^4)^{3/2}}{(-2b^3)(0.5a)^3}$$

Simplify:

 $-\frac{8b^3}{a^9}$ 

Difficulty: Medium Jerome - Chapter 02 #325 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora 2

326.  
Simplify: 
$$\left(-\frac{2x^2}{3}\right)^{-2} \left(\frac{5^2}{6x^3}\right) - \frac{15}{x^5}\right)^{-1}$$

 $-\frac{5}{8x^2}$ 

Difficulty: Medium Jerome - Chapter 02 #326 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra

Type: Wora

1.19641

Difficulty: Easy Jerome - Chapter 02 #327 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

328. Evaluate to six-figure accuracy:  $(1.05)^{1/6} - 1$ 

0.00816485

Difficulty: Easy Jerome - Chapter 02 #328 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra

Type: Wora

329.

$$\frac{(1\!+\!0.0075\,)^{36}-1}{0.0075}$$

Evaluate to six-figure accuracy:

41.1527

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

 $\frac{1 - (1 + 0.045)^{-12}}{1 - (1 + 0.045)^{-12}}$ 330. 0.045

Evaluate to six-figure accuracy:

9.11858

Difficulty: Easy Jerome - Chapter 02 #330 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra Type: Wora

331.

 $\frac{(1.00\overline{6})^{240}-1}{0.00\overline{6}}$ 

Evaluate to six-figure accuracy:

589.020

Difficulty: Easy

Jerome - Chapter 02 #331

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student text

Topic: Algebra

Type: Wora

0.00826484

Difficulty: Easy Jerome - Chapter 02 #332 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Student text Topic: Algebra

Type: Wora

333. 
$$\frac{2x}{1+0.13 - \frac{92}{365}} + x\left(1+0.13 - \frac{59}{365}\right) = \$831$$

Solve for x to five-figure accuracy:

\$280.97

Difficulty: Medium Jerome - Chapter 02 #333 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Woro

334.

$$3x(1.03^5) + \frac{x}{1.03^3} + x = \frac{\$2500}{1.03^2}$$

Solve for *x* to five-figure accuracy:

\$436.96

Jerome - Chapter 02 #334 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

335.

$$\frac{x}{1.08^3} + \frac{x}{2}(1.08)^4 = \$850$$

Solve for x to five-figure accuracy:

\$576.63

Difficulty: Medium Jerome - Chapter 02 #335 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora

336. Solve for x to five-figure accuracy:

$$2x\left(1+0.085-\frac{77}{365}\right)+\frac{x}{\left(1+0.085-\frac{132}{365}\right)}=\$1565.70$$

\$520.85

Difficulty: Medium Jerome - Chapter 02 #336 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Student text Topic: Algebra Type: Wora 337. Use formula (4 - 2),  $N = L(1 - d_1)(1 - d_2)(1 - d_3)$ , to calculate  $d_2$  if N = \$324.30, L = \$498,  $d_1 = 0.20$ , and  $d_3 = 0.075$ .

12.0%

Difficulty: Easy Jerome - Chapter 02 #337 Learning Objective: 02-02 Solve a linear equation in one variable. Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora

338. Use the formula  $Vf = Vi(1 + c_1)(1 + c_2)(1 + c_3)$  to determine  $c_2$  if Vf = \$586.64, Vi = \$500,  $c_1 = 0.17$ , and  $c_3 = 0.09$ .

-8.00%

Difficulty: Easy Jerome - Chapter 02 #338 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Wora 256.5%

Difficulty: Easy Jerome - Chapter 02 #339 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

340. 80% of what amount is \$100?

\$125.00

Difficulty: Easy Jerome - Chapter 02 #340 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

341.  $\frac{3}{4}\%$  of what amount is \$1.00?

\$133.33

342. Fifteen minutes is what percentage of two hours?

12.5%

Difficulty: Easy Jerome - Chapter 02 #342 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Woro

343. Solve the following equations.

3x + 5y = 112x - y = 16

(7, -2)

Difficulty: Medium Jerome - Chapter 02 #343 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Wora 344. Solve each of the following pairs of equations to three-figure accuracy.

a) 4a - 5b = 30 2a - 6b = 22b) 76x - 29y = 1050-213x - 63y = 250

a) (5.00, -2.00); b) (11.4, -6.32)

Difficulty: Medium Jerome - Chapter 02 #344 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Student text Topic: Algebra Type: Woro

345. Rearrange the formula  $FV = PV(1 + i_1)(1 + i_2)$  to isolate  $i_1$ .

$$i_1 = \frac{FV}{PV(1+i_1)} - 1$$

Difficulty: Easy Jerome - Chapter 02 #345 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Student text Topic: Algebra Type: Word

- 346. Yellowknife Mining sold 34,300 oz of gold in 1992 at an average price of \$320 per ounce. Production was down to 23,750 oz in 1993 because of a strike of the miners, but the average price obtained was \$360 per ounce. What was the percent change from 1992 to 1993 in:
  - a) The amount of gold produced?
  - b) The average selling price per ounce?
  - c) The revenue from the sale of gold?

a) -30.76%; b) 10.34%; c) -23.60%

Difficulty: Easy Jerome - Chapter 02 #346 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

- 347. Two years ago the shares of Diamond Strike Resources traded at a price of \$3.40 per share. One year later the shares were at \$11.50, but then they declined in value by 35% during the subsequent year. Calculate:
  - a) The percent change in the share price during the first year.
  - b) The current share price.

a) 238.24%; b) \$7.48

Difficulty: Easy Jerome - Chapter 02 #347 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra 348. Barry recently sold some stock after holding it for 2 years. The stock rose 150% in price during the first year but fell 40% in the second year. At what price did he buy the stock if he sold it for \$24 per share?

\$16.00

Difficulty: Easy Jerome - Chapter 02 #348 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora

349. Albion Distributors' revenues and expenses for the fiscal year just completed were \$2,347,000 and \$2,189,000, respectively.

a) If in the current year revenues rise by 10% but expense increases are held to 5%, what will be the percent increase in operating profit?

b) If, instead, revenues decline by 10% and expenses are reduced by 5%, what will be the percent change in operating profit?

a) 79.27%; b) -79.27%

Difficulty: Easy Jerome - Chapter 02 #349 Learning Objective: 02-07 Solve problems involving percent change. Source: Student text Topic: Algebra Type: Wora 350. The annual net income of the Todd Bros. partnership is distributed so that Ken receives \$15,000 more than 80% of Hugh's share. How should a net income of \$98,430 be divided between the partners?

Hugh = \$46,350 and Ken = \$52,080

Difficulty: Medium Jerome - Chapter 02 #350 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora

351. The profits from a partnership are to be distributed so that Grace receives 20% more than Kajsa, and Mary Anne receives five-eighths as much as Grace. How much should each receive from a total distribution of \$36,000?

Kajsa receives \$12,203.39; Grace receives \$14,644.07; Mary Anne receives \$9152.54

Difficulty: Medium Jerome - Chapter 02 #351 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 352. Nguyen fishes for red snapper and lingcod off the coast of British Columbia, and delivers his catch each week to a fish buyer. On one delivery, he received \$2454.20 for 370 kg of red snapper and 264 kg of lingcod. On another occasion he was paid \$2124.70 for 304 kg of lingcod and 255 kg of red snapper. What price per kg was Nguyen paid for each type of fish?

Lingcod: \$3.55 per kg; Red snapper: \$4.10 per kg

Difficulty: Haro Jerome - Chapter 02 #352 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

353. Deanna is paid a base salary plus commission. On sales of \$27,000 and \$35,500 in two successive months, her gross pay was \$2815.00 and \$3197.50, respectively. What are her base salary and commission rate (in percent)?

Base: \$1600 per month; Commission rate: 4.5%

Difficulty: Haro Jerome - Chapter 02 #353 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro 354. Rory invested a total of \$7800 in shares of ABC Ltd. and XYZ Inc. One year later the investment was worth \$9310, after the shares of ABC had increased in value by 15% and the shares of XYZ were up 25%. How much did Rory invest in each company?

\$3400 invested in XYZ; \$4400 invested in ABC

Difficulty: Medium Jerome - Chapter 02 #354 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Woro

355. A hockey arena has 2500 seats in the preferred red sections near centre ice and 4500 seats in the less desirable blue sections. At regular season prices, a sell-out would generate ticket revenue of \$50,250 for a single game. Ticket prices are raised by 20% in the "blues" and 30% in the "reds" for the playoffs. Ticket revenue from a playoff sell-out would be \$62,400. What are the ticket prices for the playoffs?

\$10.92 reds; \$7.80 blues

Difficulty: Medium Jerome - Chapter 02 #355 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Student text Topic: Algebra Type: Wora 356. Through a calculation (on Canadian Individual Tax Returns) known as the "Old Age Security clawback", an individual receiving Old Age Security (OAS) benefits must repay an increasing portion of these benefits to the federal government as the individual's net income rises beyond a certain threshold. If the OAS clawback is 15% of net income exceeding \$68,000, at what amount of net income must a taxpayer repay all \$6300 OAS benefits received in the year?

## \$110,000

Difficulty: Medium Jerome - Chapter 02 #356 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student text Topic: Algebra Type: Wora

357. During a one-day special, a grocery store sells cucumbers at 98 cents each or four for the price of three. At the end of the day, the store's computer reports that revenue from the sale of 541 cucumbers was \$418.46. How many cucumbers were sold on the four-for-three promotion?

456

Difficulty: Medium Jerome - Chapter 02 #357 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: Wora

358. 
$$\left(\frac{3a^{3}h^{2}}{a-b}\right)$$
Simplify:

4

$$\frac{81a^{11}b^*}{\left(a-b\right)^4}$$

Difficulty: Medium Jerome - Chapter 02 #358 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: Woro

359. 
$$\left(\frac{3}{2x^2}\right)^2 \left(\frac{6x^3}{5^2}\right) - \frac{x}{5}\right)^{-1}$$
Simplify:

 $-\frac{27}{10x^2}$ 

Difficulty: Medium

Jerome - Chapter 02 #359

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Learning Objective: 02-02 Solve a linear equation in one variable.

Source: Test bank

Topic: Algebra

Type: Wora

360. 
$$\frac{(-2y)^3 (y^4)^{-2}}{(y^{-2})^2 (4y)^2}$$

-2

Simplify:

 $-\frac{y}{2x^4}$ 

Difficulty: Medium Jerome - Chapter 02 #360 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: Wora

 $\frac{\left[x^{1/3}\right]x^{2/3}x^{3/2}}{\left(8x^3\right)^{2/3}}$ 361. Simplify:

 $\frac{x}{4}$ 

Difficulty: Medium

Jerome - Chapter 02 #361

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Learning Objective: 02-02 Solve a linear equation in one variable.

Source: Test bank

Topic: Algebra

Type: Wora

362. A wholesaler sells to retailers at a 27% discount from the suggested retail price. What is the suggested retail price of an item that costs the retailer \$100?

\$136.99

Difficulty: Medium Jerome - Chapter 02 #362 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: Word

363. Simplify: 2a + (-a) + 4a - 5a

2*a* 

Difficulty: Easy Jerome - Chapter 02 #363 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: Wora

364. Simplify: -4x - [-3x + 2(x - 6)]

-3*x* + 12

Source: Test bank Topic: Algebra Type: Woro

365. 
$$R[\frac{(1+i)^n - 1}{i}]$$
 for  $R = $1200, i = 0.02, n = 6$ 

\$3154.06

Difficulty: Easy Jerome - Chapter 02 #365 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: Woro

366.

Simplify:  $\frac{(2x^4y^2z^4)^2}{4xyz^2}$ 

 $x y^{3-1}$ 

Difficulty: Medium

Jerome - Chapter 02 #366

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Learning Objective: 02-02 Solve a linear equation in one variable.

Source: Test bank

Topic: Algebra

Type: Wora

x8

Difficulty: Medium Jerome - Chapter 02 #367 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: Woro

368.  $\frac{1 - (1 + 0.015)^{18}}{0.015}$ 

15.67

Difficulty: Medium Jerome - Chapter 02 #368 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: Woro 369. Solve for the unknown variable: 3(x-6) + 5x - 2(2x-3) = 0

*x* = 3

Difficulty: Easy Jerome - Chapter 02 #369 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: Wora

370. Solve for the unknown variable: 9x + 10 = -3x + 34

*x* = 2

Difficulty: Easy Jerome - Chapter 02 #370 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: Woro

371. Solve for the unknown variable:  $1.5a + 3(4a - 6) = a(1.5)^2$ 

*a* = 1.6

Difficulty: Medium Jerome - Chapter 02 #371 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank

Topic: Algebra Type: Wora

372. 
$$\frac{x}{(1 \ 02)^6} + 3x(1 \ 02)^4 - \$1000 = \frac{\$4000}{(1 \ 02)^3}$$

\$1153.32

Difficulty: Hara Jerome - Chapter 02 #372 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: Woro

373. 2x + 7y = -8Solve for the unknown variable: 5x - 2y = 19

*x* = 3; *y* = -2

Difficulty: Easy Jerome - Chapter 02 #373 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: Woro Solve for the unknown variable: -0.3x + 0.7y = 0.37

x = 0.4; y = 0.7

Difficulty: Medium Jerome - Chapter 02 #374 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: Woro

375. 2y = 5x

Solve for the unknown variable: 3y - 5x = 0

x = 0; y = 0

Difficulty: Haro Jerome - Chapter 02 #375 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: Woro 376. Surinder works in a retail store in Square One in Mississauga. She earns a base salary of
\$320 per week, and a commission of 3% on sales over her quota of \$5000. If Surinder earned
\$515 last week, what was the value of her sales?

\$11,500

Difficulty: Medium Jerome - Chapter 02 #376 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Test bank Topic: Algebra Type: Woro

377. Tickets for the end of semester dance sold for \$10 if purchased in advance, and \$15 if purchased at the door. If 392 tickets were sold for a total of \$4280, how many tickets were sold at the door?

72

Difficulty: Medium Jerome - Chapter 02 #377 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Test bank Topic: Algebra Type: Wora 378. Omar earns \$17.00 per hour for a forty-hour week. His overtime rate is 1 ½ times any hours exceeding forty in a week. If Omar earned \$807.50 last week, how many overtime hours did he work?

5

Difficulty: Medium Jerome - Chapter 02 #378 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Test bank Topic: Algebra Type: Woro

379. Mrs. Singh invested \$20,000 in two investments paying 2% and 3% respectively. She earned\$460 interest for the year. How much did Mrs. Singh invest at 3%?

\$6000

Difficulty: Medium Jerome - Chapter 02 #379 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Test bank Topic: Algebra Type: Woro 380. Kristina is in charge of billing for a company that does computer training. She is preparing an invoice for \$1340 for 32 hours of work, which includes training at \$70 per hour and preparation of a manual at \$25 per hour. How many hours of training are included in the invoice?

12

Difficulty: Medium Jerome - Chapter 02 #380 Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. Source: Test bank Topic: Algebra Type: Woro

381. How much is \$10 after an increase of 900%?

\$100.00

Difficulty: Easy Jerome - Chapter 02 #381 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: Wora 382. Manvir bought a stock for \$80 last week. Yesterday, the stock went up by 20%. Today it dropped by 20%. What is the current value of the stock?

\$76.80

Difficulty: Medium Jerome - Chapter 02 #382 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: Wora

383. Cliff just received a raise to \$18.45 per hour from \$18.00. What is the percent increase in his hourly rate?

2.5%

Difficulty: Medium Jerome - Chapter 02 #383 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: Wora 384. If the CPI increases from 120.0 to 125.0 over a period, what is the percent increase in the CPI?

4.17%

Difficulty: Medium Jerome - Chapter 02 #384 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: Wora

385. A coat is reduced by 30% to a sale price of \$45.99. What was the selling price of the coat?

\$65.70

Difficulty: Medium Jerome - Chapter 02 #385 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: Word

386. Sales have increased by 10% over last year. What percentage less were last year's sales than this year's sales?

9.09%
387. Madison found a sweater at a suburban discount mall for 25% less than at a store in downtown Toronto. What percentage more would she have paid if she bought the sweater in downtown Toronto?

33.3%

Difficulty: Haro Jerome - Chapter 02 #387 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: Woro

388. If December sales were 30% more than November sales, by what percent are November sales less than December sales?

23.1%

Difficulty: Haro Jerome - Chapter 02 #388 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: Wora 389. If operating expenses are 25% of revenue, by what percentage does revenue exceed operating expenses?

300%

Difficulty: Haro Jerome - Chapter 02 #389 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: Woro

390. Wilfredo can do a task 35% faster than Kunal. What percentage less time than Kunal does Wilfredo take to do a task?

25.9%

Difficulty: Hara Jerome - Chapter 02 #390 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: Wora 391. Simplify and collect like terms: -a + (2b - c) - (a - b + c)

- <u>A.</u> -2*a* + 3*b* 2*c* B. -2*a* + *b* - 2*c* C. 3*b* - 2*c* D. -2*a* + 3*b*
- E. -2a + 2b 2c

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #391 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC

392. Simplify and collect like terms: 1 - (3x - xy + y) - (-x + y - 5xy)

- A. 1 2x 2y 6xy
- **B.** 1 2x 2y + 6xy
- C. 1 4x 2y + 6xy
- D. 1 2x 2y + 4xy
- E. 1 4*x* 2*y* 6*xy*

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #392 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC

- A.  $6x^2 6xy 6y^2$
- B.  $6x^2 + 10xy 6y^2$
- **C.**  $6x^2 9xy 6y^2$
- D.  $6x^2 9xy + 6y^2$
- E.  $6x^2 + 10xy + 6y^2$

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #393 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC

## 394. Simplify and collect like terms: 9x - [4y - 3(x - y)]

- A. 12x + 7y
- B. 6x-7y
- C. 6x + 7y
- <u>D.</u> 12*x* 7*y*
- E. 9x-7y

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #394 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC  $\frac{4x+5}{8} - 2.1(x-7)$ 

- A. -1.6*x* 14.075
- B. -1.6*x* 15.325
- C. 2.6*x* + 15.325
- D. 2.6*x* 14.075
- <u>E.</u> -1.6*x* + 15.325

Difficulty: Easy Jerome - Chapter 02 #395 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Test bank

Topic: Algebra

Туре: МС

396.

$$\frac{x}{5} + \frac{2}{5} - 0.7x^2 - \frac{3}{5}x + \frac{3}{4}$$

Simplify and collect like terms:

A. 
$$-0.7x^2 - 4x + 1.15$$
  
B.  $0.7x^2 - 4x + 1.15$   
C.  $-0.7x^2 - 4x + 35$ 

D.  $0.7x^2 - 4x + 35$ 

Difficulty: Medium Jerome - Chapter 02 #396 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC

397.

$$\frac{P}{1+0.07 \times \frac{5}{12}} + 2P(1+0.07 \times \frac{4}{12})$$
ms:

Simplify and collect like terms:

- A. 3.076*F*
- <u>**B.**</u> 3.018*P*
- C. 2.787*P*
- D. 3.532*P*
- E. 2.956*P*

Туре: МС

398.

$$x(1+0.045 \times \frac{55}{365}) + \frac{2x}{(1-0.045 \times \frac{200}{365})}$$

Simplify and collect like terms:

- A. 2.957*x*
- B. 2.208*x*
- <u>C.</u> 3.057*x*
- D. 2.068*x*
- E. 1.983*x*

Difficulty: Medium

Jerome - Chapter 02 #398

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Test bank

Topic: Algebra

Туре: МС

399.

s: 
$$\frac{12xy - 6y^2}{3y}$$

Simplify and collect like terms:

A. 4x + 2y

 $B_{1}=4xy^{2}+2y^{2}$ 

C.  $4xy + 2y^2$ 

 $\underline{\mathsf{D}}$ . 4x - 2y

## $= \frac{4xy}{1-2y^2}$

Difficulty: Easy Jerome - Chapter 02 #399 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC Simplify and collect like terms:

- A.  $2y^{2} 3x^{2}y + 5y^{3}$ B.  $2xy - 3x^{2}y + 5y^{3}$ C.  $2y - 3x^{2}y + 5y$ D.  $2y - 3x^{2} + 5y$
- $\underline{\mathsf{E}}_{*}^{2} 2y 3x^{2}y + 5y^{3}$

Difficulty: Easy Jerome - Chapter 02 #400 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC

- 401. Evaluate the following expression: 3x + 4y 6xy, for x = 2, y = -3
  - **A.** 30
  - B. -42
  - C. 54
  - D. -18
  - E. 24

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #401 402.

Evaluate the following expression: P(1+rt), for P = \$1575, r = .055,  $t = \frac{168}{365}$ 

- A. \$39.87
- <u>**B.</u>** \$1614.87</u>
- C. \$1973.71
- D. \$16,128
- E. \$724.96

Difficulty: Easy

Jerome - Chapter 02 #402

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Test bank

Topic: Algebra

Туре: МС

403. Simplify the following:  $a^2 a^6 a$ 

A. a<sup>8</sup>
 B. a<sup>7</sup>
 C. a<sup>9</sup>
 D. a<sup>12</sup>

E.  $a^{13}$ 

Difficulty: Easy Jerome - Chapter 02 #403 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC 404. Simplify the following:  $(a^3)(a^{-6})(a^3)$ 

A. *a*<sup>11</sup>

В. *а* 

C. a<sup>-36</sup>

<u>D.</u> a<sup>-1</sup>

E. a<sup>-s</sup>

Difficulty: Easy Jerome - Chapter 02 #404 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC A. <sup>b<sup>+</sup></sup> B. <sup>b<sup>0</sup></sup> C. <sup>b<sup>10</sup></sup> D. <sup>b<sup>-6</sup></sup> E. <sup>b<sup>5</sup></sup> D. <sup>fof</sup> Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank

Type: MC

406. Simplify the following:  $y^{*} + y^{-1}$ 

<u>A.</u> y<sup>13</sup> B. y<sup>3</sup> C. y<sup>-40</sup> D. y<sup>-40</sup> E. y<sup>-12</sup>

> Difficulty: Easy Jerome - Chapter 02 #406 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

## 407. Simplify the following: $(x^{5})^{4}$

A.  $x^9$ 

 

 B. x<sup>20</sup>

 C. x

 D. x<sup>-1</sup>

 E. x<sup>0</sup>

 Difficulty: Easy Jerome - Chapter 02 #407 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Tapic: Algebra

 408. Simplify the following:  $(2x^3)^5$ 

A. 10315

B. 32x<sup>8</sup>

<u>C.</u> - $32x^{13}$ 

D. 2x<sup>1</sup>

 $E 2x^8$ 

Difficulty: Easy Jerome - Chapter 02 #408 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

409.	Simplify the following: $\frac{(x^{5})(x + x^{-3})}{x^{-4}}$
	A. <b>x<sup>-1</sup></b>
	B. x <sup>6</sup>
	C. $x^{-2}$
	<u>D.</u> x <sup>-</sup>
	E. $x^2$

Difficulty: Easy Jerome - Chapter 02 #409 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC



A. a<sup>0</sup> B. <sup>a</sup> C. <sup>a-11</sup> D. a<sup>-5</sup>

<u>E.</u> a<sup>-12</sup>

Difficulty: Easy Jerome - Chapter 02 #410 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

- 411. Simplify the following:  $\frac{(2a^3b^2)^4}{a^2b^3}$ 
  - <u>A.</u> 16a<sup>10</sup>b\*
  - B. 2*a*<sup>10</sup>b<sup>5</sup>
  - C. 16a<sup>3</sup>b<sup>3</sup>
  - D.  $2a^{5}b^{5}$
  - $\in$  16 $a^{3}b^{3}$

Difficulty: Easy Jerome - Chapter 02 #411 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

412. 
$$\left(\frac{4x}{2x^3}\right)^2 \left(\frac{3y^2}{2y^3}\right)^2 \left(\frac{3xy}{5}\right)^{-1}$$
Simplify the following:

A. 
$$\frac{5x^2}{16y^3}$$

$$\frac{B.}{16y^3}$$
C. 
$$\frac{5x^3}{8y^2}$$

$$\vdash \frac{5x^2}{8y^2}$$

Difficulty: Easy Jerome - Chapter 02 #412 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC 413. Evaluate the following:  $25^{3/2}$ 

A. 8.6

B. 37.5

- <u>C.</u> 125
- D. 5
- E. 625

Difficulty: Easy Jerome - Chapter 02 #413 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

414. Evaluate the following:  $-16^{\frac{1}{4}}$ 

- A. 32
- B. 64
- C. -64
- <u>D.</u> -32
- E. 10

Difficulty: Easy Jerome - Chapter 02 #414 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC 415. Evaluate the following:  $\sqrt[4]{(121 \ 89)^2}$ 

A. 14,857.17

- B. 487.56
- C. 3714.29
- D. 60.945
- <u>E.</u> 11.04

Difficulty: Easy Jerome - Chapter 02 #415 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

416.		$1.04^{10} - 1$
	Evaluate the following:	0.04

- <u>A.</u> 12.006
- B. 698.137
- C. 1.201
- D. 36.006
- E. 35.58

Difficulty: Easy Jerome - Chapter 02 #416 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

417.		$1.055^{\circ}-1$
	Evaluate the following:	0.055

- A. 233.95
- <u>B.</u> 6.888 C. 0.689
- D. 23.395
- E. 23.763

Difficulty: Easy

Jerome - Chapter 02 #417

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Learning Objective: 02-02 Solve a linear equation in one variable.

Source: Test bank

Topic: Algebra

Туре: МС

418.		1-1-075-8
	Evaluate the following:	0.075

A. -5.857

B. -10.446

- **C.** 5.857
- D. 0.5857
- E. 13.485

Difficulty: Medium Jerome - Chapter 02 #418 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

419.		$1 - 1  056^{-15}$
	Evaluate the following:	0.056

- A. -9.971
- B. -22.579
- C. 58.29
- <u>D.</u> 9.971
- E. 25.743

Difficulty: Medium

Jerome - Chapter 02 #419

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Learning Objective: 02-02 Solve a linear equation in one variable.

Source: Test bank

Topic: Algebra

Туре: МС

420.

 $\left(\frac{4}{3}\right)^2 \left(\frac{3}{4}\right)^{-3} \left(\frac{4}{3}\right)^{-2}$ 

Evaluate the following:

A.  $\frac{4}{3}$ B.  $\frac{3}{4}$ C.  $\frac{16}{3}$ D.  $\frac{4}{9}$ 

<u>E.</u> 1

Difficulty: Haro Jerome - Chapter 02 #420 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

- 421. The retail price of a sweater is \$161.00, which includes a markup of 40% of cost. What is the cost price of the sweater?
  - <u>A.</u> \$115
  - B. \$70.84
  - C. \$64.40
  - D. \$96.60
  - E. \$100.63

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #421 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 422. The retail price of a packaged CD is \$60.00, which includes a markup of 150% of cost. What is the cost price of the CD?
  - A. \$40
  - **B.** \$24
  - C. \$36
  - D. \$20
  - E. \$32

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #422 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 423. The commission on a transaction is 3% of the first \$100,000 and 2% of the balance. What was the amount of a transaction where the commission charged was \$10,100?
  - A. \$225,000
  - B. \$545,000
  - C. \$310,000
  - D. \$355,000
  - <u>E.</u> \$455,000

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #423 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

424. Sam has \$20,000 to invest. He invested part at 5% and part at 6%. His investments earned\$1120 total interest for the year. How much did Sam invest at each rate?

- A. \$12,000; \$8000
- B. \$10,000; \$10,000
- C. \$6000; \$14,000
- D. \$14,000; \$6000
- <u>E.</u> \$8000; \$12,000

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #424 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra

- 425. Anders has \$35,000 to invest. He invested part at 5.5% and part at 7%. His investments earned \$2195 total interest for the year. How much did Anders invest at each rate?
  - **A.** \$17,000; \$18,000
  - B. \$18,000; \$17,000
  - C. \$20,000; \$15,000
  - D. \$15,000; \$20,000
  - E. \$10,000; \$25,000

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #425 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 426. Tickets for the school play were \$3 for students and \$5 for all others. The box office sold 750 tickets for a total of \$3200. How many student tickets were sold?
  - A. 475
  - **B.** 275
  - C. 500
  - D. 250
  - E. 300

Accessibility: Keyboard Navigation

Difficulty: Easy

Jerome - Chapter 02 #426

Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns.

Source: Test bank

- 427. At a United Way fund raiser, students sold cinnamon buns for \$2 each or 3 for \$5. They sold 500 all together, and raised \$900. How many of the 3 for \$5 were sold?
  - A. 100
  - B. 200
  - <u>**C.**</u> 300
  - D. 250
  - E. 150

Accessibility: Keyboard Navigation

Difficulty: Medium

Jerome - Chapter 02 #427

Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns.

Source: Test bank

Topic: Algebra

Туре: МС

428. Stavros sells gold and green fabric in his drapery store. He buys the same quantity of both each quarter for \$18 per metre for the gold fabric and \$20 for the green fabric. His last order totalled \$2290. The supplier has advised Stavros that the gold fabric will increase by 20% and the green fabric by 25%, and his total order for the next quarter will be \$2813. How many metres of gold fabric does Stavros order each quarter?

A. 65

B. 56

C. 85

**D**. 55

E. 25

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #428 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 429. What was the percent change in unit price when a box of tissues dropped from 200 to 150 tissues per box? (with no change in the price per box)?
  - A. 25%
  - B. 20%
  - C. 30%
  - D. 35%
  - **E.** 33.3%

- 430. What was the percent change in unit price when a box of tissues dropped from 400 to 350 tissues per box? (with no change in the price per box)?
  - A. 12.5%
  - B. 15%
  - C. 17.5%
  - D. 11.7%
  - <u>E.</u> 14.3%

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #430 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: MC

- 431. What is the percent change in unit price of a bag of cookies if the number of cookies per box is decreased by 15% (with no change in the price per bag)?
  - **A.** 17.6%
  - B. 15%
  - C. 20%
  - D. 10%
  - E. 11.1%

- 432. A loan company dropped the interest rate it charges on second mortgages from 9.5% to 7.9%.What percent reduction did this represent?
  - A. 16%
  - **B.** 16.8%
  - C. 1.6%
  - D. 20.3%
  - E. 15.7%

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #432 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: MC

- 433. A loan company dropped the interest rate it charges on second mortgages from 8.7% to 7.3%.What percent reduction did this represent?
  - A. 1.4%
  - B. 19.2%
  - <u>C.</u> 16.1%
  - D. 14%
  - E. 15.6%

Difficulty: Easy Jerome - Chapter 02 #433 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: MC

- 434. If the Canadian dollar is worth 18% less than the U.S. dollar, by what percentage does theU.S. dollar exceed the value of the Canadian dollar?
  - A. 15%
  - B. 18%
  - C. 24%
  - **D.** 21.95%
  - E. 20%

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #434 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: MC

- 435. If the Canadian dollar is worth 22% less than the U.S. dollar, by what percentage does the U.S. dollar exceed the value of the Canadian dollar?
  - A. 22%
  - B. 20%
  - C. 25.2%
  - D. 30.8%
  - **E.** 28.2%

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #435 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: MC

- 436. A car dealer normally lists cars at 25% above cost. During a sale the manger offered a 10% reduction. If a car sold for \$20,812.50, what was the cost price to the dealership?
  - **A.** \$18,500
  - B. \$23,125
  - C. \$18,315
  - D. \$16,650
  - E. \$17,250

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #436 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: MC

- 437. If the euro is worth 60% more than the Canadian dollar, how much less (in percentage terms) is the Canadian dollar worth than the euro?
  - A. 40%
  - **B.** 37.5%
  - C. 62.5%
  - D. 45%
  - E. 55%

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #437 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra Type: MC

- 438. If the euro is worth 57% more than the Canadian dollar, how much less (in percentage terms) is the Canadian dollar worth than the euro?
  - A. 43%
  - B. 63.7%
  - <u>C.</u> 36.3%
  - D. 42%
  - E. 45%

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #438 Learning Objective: 02-07 Solve problems involving percent change. Source: Test bank Topic: Algebra 439. Simplify: 8 - (2x + 4y - 3) - (4y + 10)

A. -8y - 2x + 21 **B.** -8y - 2x + 1C. -8y - 2x - 2D. -2x + 1E. -2x + 21

> Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #439 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC

440. Solve the following equation (5x - 2y)(x - 2y) =

- A. 5x<sup>2</sup> 12xy 4y<sup>2</sup>
- B.  $5x^2 + 8xy 4y^2$
- <u>C.</u> 5x<sup>2</sup> 12xy + 4y<sup>2</sup>
- D.  $5x^2 8xy + 4y^2$
- E.  $5x^2 + 12xy + 4y^2$

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #440 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC
A. b + 6

- B. 3*b* 2
- C. 3*b* + 2
- <u>D.</u> *b* 2
- E. *b*-6

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #441 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents. Source: Test bank Topic: Algebra Type: MC

442. Evaluate: -4(r - t) - (2r - 4t) for r = 1/2 and t = 1/4.

- A. 1
- B. 5
- C. 3
- D. -5
- <u>E.</u> -1

Accessibility: Keyboard Navigation

Difficulty: Easy

Jerome - Chapter 02 #442

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Test bank

Topic: Algebra

Туре: МС

 $\frac{6a+9}{3}-4(a-1) =$ 443.

Solve the following equation

- A. -2*a* + 13
- B. -2*a* 1 **C**. -2*a* + 7
- D. 2*a* + 7
- E. 2*a* 1

Accessibility: Keyboard Navigation

Difficulty: Easy

Jerome - Chapter 02 #443

Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Test bank

Topic: Algebra

Туре: МС

Evaluate:  $L(1 - d_1)(1 - d_2)$  for  $L = $1000, d_1 = 0.30$ , and  $d_2 = 0.20$ . 444.

- A. \$440.00
- B. \$500.00
- C. \$1785.71
- **D.** \$560.00
- E. \$600.00

Accessibility: Keyboard Navigation
Difficulty: Easy
Jerome - Chapter 02 #444
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Test bank
Topic: Algebra
Туре: МС

Solve the following equation  $2.48832^{1/5} =$ 445.

- A. 95.396217
- B. 0.0104826
- <u>C.</u> 1.2
- D. 3.0
- E. 0.8333333

Difficulty: Easy Jerome - Chapter 02 #445 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Туре: МС

446. Solve the following equation

 $\begin{pmatrix} r^3t^4 \\ t \end{pmatrix}^3 =$ 

- A. 19t4
- B. 16t6
- C. 16 f
- D. /<sup>9</sup>/1
- <u>E.</u> /<sup>9</sup>/

Difficulty: Medium Jerome - Chapter 02 #446 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Туре: МС

447.	Solve the following equation	$\frac{(r^9)^2(r^6)}{r^{12}}$	=
	A. / <sup>5</sup> B. / <sup>17/12</sup>		
	<u>C.</u> / <sup>12</sup> D. / <sup>2</sup> E. / <sup>36</sup>		

Difficulty: Medium Jerome - Chapter 02 #447 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC

- 448. Solve the following equation  $(8^2)(2^{-4})(-2)^2 =$ 
  - A. 1024
  - B. 256
  - C. 4
  - D. 48
  - <u>E.</u> 16

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #448 Learning Objective: 02-02 Solve a linear equation in one variable. Source: Test bank Topic: Algebra Type: MC 449. Solve for x:  $2x + \frac{1}{8}x = x + 10$ 

A. 3<sup>1</sup>/<sub>5</sub>

### <u>B.</u> 8 8/9

C. - 3<sup>1</sup>/<sub>5</sub>

## D. 4<u>12</u>

E. <u>9</u>

Difficulty: Medium Jerome - Chapter 02 #449 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: MC <u>B.</u> 9/11 C. 1.5 D. −2 13/22

A. 25/6

E. 3.875

Difficulty: Hara Jerome - Chapter 02 #450 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: MC

451.  $-\left(\frac{1}{2}x-5\right) = 2x-10$ 

<u>A.</u> 6

- B. -6
- C. -10
- D. 31/3

E. 10

Difficulty: Easy Jerome - Chapter 02 #451 Learning Objective: 02-03 Solve two linear equations in two variables.

Source: Test bank Topic: Algebra Type: MC

452.  $\frac{x}{1.5^2} + 3x(1.5)^2 = 100$ 

- A. 13.9082
- **B.** 13.8996
- C. 14.8148
- D. 25.0000
- E. 225.0000

Difficulty: Haro Jerome - Chapter 02 #452 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: MC

- 453. An employee earns \$1562.50 for 55 hours of work during last week. His regular workweek is40 hours and he gets overtime at time and one-half the regular rate of pay. What is the regular hourly rate of pay?
  - A. \$37.50
  - B. \$28.41
  - C. \$42.61
  - D. \$58.59
  - <u>E.</u> \$25.00

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #453

- 454. The stock market index decreased this month by one-thirteenth of last month's index. If this month's index is 2400, what was last month's index?
  - A. 2585
  - B. 2320
  - C. 2483
  - <u>D.</u> 2600
  - E. 2215

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #454 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 455. A company laid off 80% of its work force. The number of employees after the layoff is 3000.How many employees were there before the layoff?
  - A. 5400
  - B. 7200
  - C. 3600
  - <u>D.</u> 15,000
  - E. 3750

Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

456. John and Jill agree to form a partnership. The partnership agreement requires that John invests \$7000.00 less than one-half of what Jill is to invest. If the total investment of both is \$125,000.00, how much is Jill's investment?

**A.** \$88,000.00

- B. \$37,000.00
- C. \$78,666.67
- D. \$46,333.33
- E. \$74,393.33

Accessibility: Keyboard Navigation Difficulty: Haro Jerome - Chapter 02 #456 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 457. If actual sales of \$18,000 were 36% of budgeted sales, what were the budgeted sales?
  - <u>A.</u> \$50,000
  - B. \$52,920
  - C. \$25,920
  - D. \$10,080
  - E. \$46,080

Difficulty: Medium

Jerome - Chapter 02 #457

Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns.

Source: Test bank

Topic: Algebra

Туре: МС

458. What number is 25% less than 96?

- A. 120
- B. 128
- C. 384
- **D**. 72
- E. 125

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #458 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: MC

459. 0.51% of \$8500.00 =

- A. \$43,444.44
- B. \$1663.04
- <u>C.</u> \$43.35
- D. \$166,304.35
- E. \$434.44

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #459

#### 460. 35% of \$180.00 is what amount?

A. \$63.00	Α.	\$63.	.00
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- B. \$243.00
- C. \$117.00
- D. \$514.29
- E. \$276.92

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #460 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: MC

461.		87 <u>1</u> °°	
	What number is	2	less than 250?

- A. 218.75
- B. 468.75
- C. 133.33
- D. 383.33
- <u>E.</u> 31.25

Difficulty: Easy

Jerome - Chapter 02 #461

Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third.

Source: Test bank

462. After adding  $2\frac{1}{4}$  to a sum of money, the new amount is \$45,000.00. What was the original amount of money?

- A. \$43,987.50
- **B.** \$44,009.78
- C. \$2,000,000.00
- D. \$46,035.81
- E. \$20,000.00

Difficulty: Medium Jerome - Chapter 02 #462 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 463. Susan is paid a 15% commission of her sales. If she earns a commission of \$3800, what was the amount of her sales?
  - A. \$44,705.88
  - <u>**B.</u>** \$25,333.33</u>
  - C. \$4470.59
  - D. \$7030.00
  - E. \$3230.00

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #463 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank

- 464. An item listed at 40% above cost was sold by a dealer during a special sale at a 15% reduction from the list price. What did the item cost the dealer if it was sold for \$23,765.00?
  - A. \$23,494.81
  - B. \$33,271.00
  - C. \$19,970.59
  - D. \$27,958.82
  - E. \$43,965.25

Accessibility: Keyboard Navigation Difficulty: Haro Jerome - Chapter 02 #464 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 465. After real estate fees of 3% had been deducted from the proceeds of the sale of a property, the real estate agent sent the vendor (seller) of the property \$244,400. What was the amount of fees retained by the real estate agent?
  - **A.** \$7558.76
  - B. \$251,958.76
  - C. \$7800.00
  - D. \$7118.45
  - E. \$237,281.55

- 466. The retail price of an item is \$625.50. This includes a markup of three-quarters of the wholesale cost to the retailer. What is the wholesale cost?
  - A. \$1094.63
  - B. \$469.13
  - C. \$834.00
  - D. \$156.38
  - <u>E.</u> \$357.43

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #466 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

#### 467. \$100 is what percent less than \$125?

- A. 125%
- B. 45%
- C. 25%
- <u>D.</u> 20%
- E. 15%

Accessibility: Keyboard Navigation

Difficulty: Easy

Jerome - Chapter 02 #467

Learning Objective: 02-07 Solve problems involving percent change.

#### 468. What sum of money, increased by 7% equals \$187.25?

- A. \$200.36
- B. \$174.14
- C. \$180.25
- **D.** \$175.00
- E. \$170.00

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #468 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: MC

- 469. How much is 600 increased by 44%
  - A. 840
  - B. 644
  - <u>C.</u> 864
  - D. 1,367
  - E. 788

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #469 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra

- 470. What amount, when reduced by 60% equals \$840
  - A. \$336
  - B. \$900
  - C. \$1,680
  - D. \$1,400
  - <u>E.</u> \$2,100

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #470 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: MC

- 471. After a 5.25% raise, Johnny earned \$19.28 per hour. What was his hourly rate before the raise?
  - A. \$18.27
  - <u>**B.**</u> \$18.32
  - C. \$20.26
  - D. \$18.78
  - E. \$10.11

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #471 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 472. The population of Enfield has increased by 36% over the last five years. If the current population is 89,244 what was it 5 years ago?
  - <u>A.</u> 65,621
  - B. 53,244
  - C. 19,182
  - D. 57,123
  - E. 70,377

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #472 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 473. How much is 50 increased by 300%?
  - A. 350
  - B. 300
  - C. 250
  - **D.** 200
  - E. 150

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #473 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: MC

- A. 150%
- B. 140%
- C. 175%
- D. 200%
- **E.** 250%

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #474 Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra Type: MC

- 475. A retailer purchases merchandise at 25% below the suggested retail price. If the retailer pays\$375 for an item, what is the suggested retail price?
  - A. \$468.75
  - **B.** \$500.00
  - C. \$525.00
  - D. \$475.00
  - E. \$450.00

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #475 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 476. The share value of RipOff Technologies has dropped this year by 85%, to a new low of \$7.50 per share. How much money has been lost per share?
  - A. \$42.50
  - B. \$63.75
  - C. \$8.82
  - D. \$92.50
  - E. \$15.00

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #476 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

- 477. During the last 30 years the price of gasoline has increased by 440%. If the current price per litre is \$0.589, what was it 30 years ago?
  - A. \$0.201
  - B. \$0.149
  - C. \$0.134
  - **D.** \$0.109
  - E. \$0.037

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #477 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Test bank Topic: Algebra

- 478. Bart purchased three-quarters of a 32% interest in a Swiss Chalet franchise for \$270,000.What is implied value of the franchise?
  - A. \$115,200
  - B. \$632,800
  - C. \$980,750
  - D. \$1,125,000
  - E. \$1,625,000

Accessibility: Keyboard Navigation

Difficulty: Medium

Jerome - Chapter 02 #478

Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns.

Source: Test bank

Topic: Algebra

Туре: МС

479. Solve for *x* and *y*.

x + y = 40

-x + y = -20

- <u>A.</u> *x* = 30; *y* = 10
- B. *x* = -10; *y* = 30
- C. x = -30; y = -10
- D. *x* = -60; *y* = 20
- E. *x* = -60; *y* = -20

Accessibility: Keyboard Navigation Difficulty: Easy Jerome - Chapter 02 #479

Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: MC

480. Solve for *x* and *y*.

2x + 3y = 7

3x - y = 5

- A. *x* = 6; *y* = 2
- B. *x* = -2; *y* = 1
- C. *x* = -2; *y* = -1
- <u>D.</u> *x* = 2; *y* = 1
- E. *x* = 2; *y* = -1

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #480 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank Topic: Algebra Type: MC

- 481. The difference between two numbers is 42. If one-half of the larger number is three more than twice the smaller number, what are the two numbers?
  - A. -12 and -54
  - **B.** 12 and 54
  - C. 16.0 and 58.0
  - D. 11 and 31
  - E. -12.5 and 29.5

Accessibility: Keyboard Navigation Difficulty: Haro Jerome - Chapter 02 #481 Learning Objective: 02-05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns. Source: Test bank Topic: Algebra Type: MC

482. Solve for *x* and *y* in the following pair of equations:

### y = -0.2x + 4.2x - 0.5y = 10

- <u>A.</u> *x* = 11; *y* = 2
- B. *x* = 2; *y* = 11
- C. *x* = 11; *y* = 6.4
- D. *x* = 6.45; *y* = 2.9
- E. x = 6.4; y = 11

Accessibility: Keyboard Navigation Difficulty: Medium Jerome - Chapter 02 #482 Learning Objective: 02-03 Solve two linear equations in two variables. Source: Test bank

Topic: Algebra Type: MC

# c2 Summary

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05 Solve "word problems" that lead to a linear equation in one unknown; or two linear equations in two unknowns.	
Learning Objective: 02-	77
06 Given any two of the three quantities: percent rate; portion; and base; solve for the third.	
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