## c2

Student: $\qquad$

1. Simplify and collect the like terms: $(-p)+(-3 p)+(4 p)$
2. Simplify and collect the like terms: $(5 s-2 t)-(2 s-4 t)$
3. Simplify and collect the like terms: $4 x^{2} y+\left(-3 x^{2} y\right)-\left(-5 x^{2} y\right)$
4. Simplify and collect the like terms: $1-\left(7 e^{2}-5+3 e-e^{3}\right)$
5. Simplify and collect the like terms: $\left\{6 x^{2}-3 x y+4 y^{2}\right)-\left(8 y^{2}-10 x y-x^{2}\right\}$
6. Simplify and collect the like terms: $\left(7 m^{3}-m-6 m^{2}+70\right)-\left(5 m^{3}-9+3 m-2 m^{2}\right)$
7. Simplify and collect the like terms: $2(7 x-3 y)-3(2 x-3 y)$
8. Simplify and collect the like terms: $4\left(a^{2}-3 a-4\right)-2\left(5 a^{2}-a-6\right)$
9. Simplify and collect the like terms: $15 x-[4-2(5 x-6)]$
10. Simplify and collect the like terms: $6 a-[3 a-2(2 b-a)]$
11. Perform the operation indicated and collect the like terms: $4 a(3 a b-5 a+6 b)$
12. Perform the operation indicated and collect the like terms: $9 k\left(4-8 k+7 k^{2}\right)$
13. Perform the operation indicated and collect the like terms: $-5 x y\left(2 x^{2}-x y-3 y^{2}\right)$
14. 

Perform the operation indicated and collect the like terms: $-\left(p^{2}-4 p q-5 p\right)\left(\frac{2 q}{p}\right)$
15. Perform the operation indicated and collect the like terms: $(4 r-3 t)(2 t+5 r)$
16. Perform the operation indicated and collect the like terms: $\left(3 p^{2}-5 p\right)(-4 p+2)$
17. Perform the operation indicated and collect the like terms: $3(a-2)(4 a+1)-5(2 a+3)(a-7)$
18. Perform the operation indicated and collect the like terms: $5(2 x-y)(y+3 x)-6 x(x-5 y)$
19.

Perform the operation indicated and collect the like terms: $\frac{18 x^{2}}{3 x}$
20.

Perform the operation indicated and collect the like terms: $\frac{\frac{6 a^{2} b}{-2 a h^{2}}}{}$
21.

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

Perform the operation indicated and collect the like terms: $\frac{-4 x^{x}+10 x^{2}-6 x^{3}}{-0.5 x}$
23.

Perform the operation indicated and collect the like terms: $\frac{12 x^{3}-24 x^{2}+36 x}{48 x}$
24.

Perform the operation indicated and collect the like terms:
$\frac{32 a^{2} b-8 a b+14 u b^{2}}{2 a}$
25. Perform the operation indicated and collect the like terms: $\frac{4 a^{2} b^{3}-6 a^{3} b^{2}}{2 a b^{2}}$
26.

Perform the operation indicated and collect the like terms: $\frac{12011+i)^{2}+180(1+i)^{3}}{360(1+i)}$
27. Evaluate the following expression for the given value of the variable:
$3 d^{2}-4 d+15$ for $d=2.5$
28. Evaluate the following expression for the given value of the variable:
$15 g-9 h+3$ for $g=14, h=15$
29. Evaluate the following expression for the given value of the variable:
$7 x(4 y-8)$ for $x=3.2, y=1.5$
30. Evaluate the following expression for the given value of the variables:
/, $P r$ for $P=\$ 500, I=\$ 13.75, r=0.11$
31. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\frac{I}{f 7}$ for $r=0.095, I=\$ 23.21, \quad t=\frac{283}{365}$
32. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\frac{\frac{\lambda}{1-d}}{}$ for $N=\$ 89.10, d=0.10$
33. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: ${ }^{L\left(1-d_{1}\right)\left(1-d_{2} x_{1}-d_{3}\right)}$ 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: $P^{P(1+r)}$ for $P=\$ 770, r=0.13, \quad t=\frac{223}{\mathbf{3 6 5}}$
35. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\frac{S}{1+r t}$ for $S=\$ 2500, r=0.085, \quad t=\frac{123}{365}$
36. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\frac{s}{1+i^{n}}$ 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: $P(1 i)^{n}$ for $P=\$ 1280, i=0.025, n=3$
38. Simplify the following expression and collect the like terms:

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

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

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

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

$$
\frac{2 x}{1.045}-\frac{2.016 x}{3}+\frac{x}{2}
$$

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

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

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

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

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

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

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

$$
\text { accuracy. }{ }^{\frac{h}{\left.(i+0.055)^{2}\right)}} 3 h(1+0.055)^{3}
$$

45. Simplify the following expression and collect the like terms. Maintain five-figure accuracy. $k(1+$ $0.04)^{2}+\frac{2 k}{(1+0.04)^{2}}$
46. 

Evaluate the following expression for the given value of the variable: ${ }^{(11+1)^{\prime \prime \prime}-1}$ for $\mathrm{i}=0.0225, m$ $=4$
47. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $R\left[\frac{\left[1+i Y^{\prime \prime}-1\right.}{t}\right]$ for $R=\$ 550, i=0.085, n=3$
48. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $R\left[\frac{\left(1+i i^{\prime \prime}-1\right.}{\prime}\right]^{(1+t)}$ 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: $\frac{R}{i}\left[1-\frac{1}{(1+i)^{2}}\right]$ for $R=\$ 630, i=0.115, n=2$
50. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $P\left(1+m 7_{1}\right)+\frac{S}{1+I_{2}}$ for $P=\$ 470, S=\$ 390, r=$ $0.075, \quad i_{1}=\frac{104}{365} . \quad i_{2}=\frac{73}{365}$
51. Simplify the following: $a^{2} \times a^{3}$
52. Simplify the following: $\left\{x^{6}\right)\left(x^{-4}\right)$
53. Simplify the following: $\boldsymbol{b}^{\mathbf{1 7}} \div \boldsymbol{b}^{6}$
54. Simplify the following: $\boldsymbol{H}^{7} \div \boldsymbol{H}^{-\downarrow}$
55. Simplify the following: $\{1+1)^{4} \quad(1+1)^{9}$
56. Simplify the following: $(1+1)(1+1)^{\prime \prime}$
57.

Simplify the following: $\left(x^{4}\right)^{7}$
58.

Simplify the following: $\left(v^{3}\right)^{3}$
59.

Simplify the following: $(6)^{1 / 3}$
60.

Simplify the following: $\left(n^{0.5}\right)^{3}$
61.

62.

Simplify the following: $\frac{\left(x^{5}\right)^{6}}{x^{9}}$
63. Simplify the following: $[211+i]^{2}$
64.

Simplify the following: $\left.\left\lvert\, \frac{1+i^{3}}{3 i}\right.\right)^{3}$
65.

Simplify the following: $\frac{4 r^{5} t^{6}}{\left(2 r^{2} t\right)^{3}}$
66.

Simplify the following: $\frac{\left(-r^{3}\right) 2 r i^{4}}{\left(2 r^{-2}\right)^{2}}$
67. Evaluate the following expression to six-figure accuracy: $8^{4 / 3}$
68.

Evaluate the following expression to six-figure accuracy: $\left(-27^{2 / 3}\right)$
69. Evaluate the following expression to six-figure accuracy: $7^{3 / 2}$
70. Evaluate the following expression to six-figure accuracy: $5^{-3 / 4}$
71. Evaluate the following expression to six-figure accuracy: $\{0.001)^{-2}$
72. Evaluate the following expression to six-figure accuracy: $0.893^{-1 / 2}$
73. Evaluate the following expression to six-figure accuracy: ${ }^{11.0085}{ }^{\boldsymbol{\beta}}\{1.0085 \beta$
74. Evaluate the following expression to six-figure accuracy: $\left.(1.005)^{3} 11.005\right)^{6}$
75. Evaluate the following expression to six-figure accuracy: $\sqrt[3]{1.03}$
76. Evaluate the following expression to six-figure accuracy: $\sqrt[6]{1.05}$

Evaluate the following expression to six-figure accuracy: $\left.\left(4^{4}\right)\left(3^{-3}\right)-\frac{3}{4}\right)^{3}$
78.

79.

Evaluate the following expression to six-figure accuracy:

$$
\left(\left.\left.\frac{2}{3}\right|^{3}\left|-\frac{3}{2}\right|^{2} \right\rvert\,-\frac{3}{2} \dot{j}^{-3}\right.
$$

80. 

Evaluate the following expression to six-figure accuracy: $\left|-\frac{2}{3}\right|^{3}+\left\{\left.\frac{3}{2}\right|^{-2}\right.$
81.

Evaluate the following expression to six-figure accuracy: $\frac{\frac{1.03^{15}-1}{0.03}}{0.0}$
82.

83. Evaluate the following expression to six-figure accuracy: $\frac{1-1.0225^{-20}}{0.0225}$
84.

Evaluate the following expression to six-figure accuracy: $\frac{1-(1.00 \overline{6})^{-32}}{0.00 \overline{6}}$
85. 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: $10 a+10=12+9 a$
88. Solve the following equation: $29-4 y=2 y-7$
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: $y=192+0.04 y$
92. Solve the following equation: $x-0.025 x=341.25$
93. Solve the following equation: $12 x-4(2 x-1)=6(x+1)-3$
94. Solve the following equation: $3 y-4=3(y+6)-2(y+3)$
95. Solve the following equation: $8-0.5(x+3)=0.25(x-1)$
96. Solve the following equation: $5(2-c)=10(2 c-4)-6(3 c+1)$
97. Solve the following equation: $3.1 t+145=10+7.6 t$
98. Solve the following equation: $1.25 y-20.5=0.5 y-11.5$
99. Solve the following pair of equations. Verify your solution.

$$
\begin{aligned}
& x-y=2 \\
& 3 x+4 y=20
\end{aligned}
$$

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

$$
\begin{aligned}
& y-3 x=11 \\
& -4 y+5 x=-30
\end{aligned}
$$

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

$$
\begin{aligned}
& 4 a-3 b=-3 \\
& 5 a-b=10
\end{aligned}
$$

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

$$
\begin{aligned}
& 7 p-3 q=23 \\
& -2 p-3 q=5
\end{aligned}
$$

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

$$
\begin{aligned}
& y=2 x \\
& 7 x-y=35
\end{aligned}
$$

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

$$
\begin{aligned}
& g-h=17 \\
& \frac{4}{3} g+\frac{3}{2} h=0
\end{aligned}
$$

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

$$
\begin{aligned}
& d=3 c-500 \\
& 0.7 c+0.2 d=550
\end{aligned}
$$

106.Solve the following pair of equations to three-figure accuracy. Verify your solution. $0.03 x+0.05 y$ $=51$
$0.8 x-0.7 y=140$
107.Solve the following pair of equations to three-figure accuracy. Verify your solution.

$$
2 v+6 w=1
$$

$$
-9 w+10 v=18
$$

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.
$37 x-63 y=235$
$18 x+26 y=468$
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.
$0.33 e+1.67 f=292$
$1.2 e+0.61 f=377$
112.Solve the following pair of equations. Verify your solution.

$$
\begin{aligned}
& 318 j-451 k=7.22 \\
& -249 j+193 k=-18.79
\end{aligned}
$$

113. Solve the following equation accurate to the cent: $\frac{x}{1.1^{2}}+2 x(1.1)^{3}=\$ 1000$
114. 

Solve the following equation accurate to the cent:
$\frac{3 x}{1.025^{6}}+x 1.0251^{\beta}=\$ 2641.35$
115.Solve the following equation accurate to the cent:

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

116.Solve the following equation accurate to the cent:

$$
x(1.05)^{3}+\$ 1000+\frac{x}{1.05^{-}}=\frac{\$ 50 t \% 0}{1.05^{2}}
$$

117.Solve the following equation accurate to the cent:

$$
x\left(1+0.095 \cdot \frac{84}{365} \dot{\mid}+\frac{2 x}{\left(1+0.095 \cdot \frac{108}{365}\right)}=\$ 1160.20\right.
$$

118.Solve the following equation accurate to the cent:

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

119.Use formula (6-1), $I=P r t_{s}$ to calculate $P$ if $r=0.05, i=\$ 6.25$, and $t=0.25$.
120. Use formula (13-1), $\quad P V=\frac{P M T}{i}$, to calculate i if $P M T=\$ 900$ and $P V=\$ 150,000$. (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), $S=P(1+r t)$, 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), $S=P(1+r t)$, to calculate t if $r=0.0025, S=\$ 5100$, and $P=\$ 5000$.
125.Formula $(5-3), N I=(C M) X-F C$, contains three two-letter symbols. Use it to calculate $C M$ if $N I=$ $\$ 15,000, X=5000$, and $F C=\$ 60,000$.
126.Use formula (5-3), $N I=(C M) X-F C$, to obtain $X$ if $N I=-\$ 542.50, C M=\$ 13.50$, and $F C=$ \$18,970.
127.Use formula $(4-2), N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, to calculate $L$ if $N=\$ 1468.80, d_{1}=0.20, d_{2}=$ 0.15 , and $d_{3}=0.10$.
128.Use formula $(4-2), N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, to calculate $d_{2}$ if $N=\$ 70.29, L=\$ 99.99, d_{1}=$ 0.20 , and $d_{3}=0.05$.
129.Use the formula $F V=P V\left(1+i_{1}\right)\left(1+i_{2}\right)\left(1+i_{3}\right)$ to determine $i_{1}$ if $P V=\$ 1000, F V=\$ 1094.83, i_{2}=$ $0.03, i_{3}=0.035$.
130. Use formula (10-1), $=\operatorname{PMT}\left[\frac{\left(1+\nu^{i n}-1\right.}{i}\right]$, to obtain $P M T$ if $F V=\$ 1508.54, n=4$, and $i=0.05$.
131. Use formula (10-2), $P V=P M T\left[\frac{1-\left(1+0^{-\pi}\right.}{i}\right]$, to obtain $P M T$ if $P V=\$ 6595.20, n=20$, and $i=0.06$.
132.Rearrange formula (6-1), $/=$ Prt, to isolate $t$ on the left side.
133. Rearrange formula $(13-1), \mathbf{P V}=\frac{P M T}{i}$, 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 $(5-3), N I=(C M) X-F C$, to isolate $C M$ on the left side.
136.Rearrange formula $(5-3), N I=(C M) X-F C$, to isolate $X$ on the left side.
137. Rearrange formula (6-2), $S=P(1+r t)$, to isolate $r$ on the left side.
138.Rearrange formula (6-2), $S=P(1+r t)$, to isolate $t$ on the left side.
139.Rearrange formula $(4-2), N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, to isolate $d_{1}$ on the left side.
140.Rearrange formula $(4-2), N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, to isolate $d_{3}$ on the left side.
141. Rearrange the formula $F V=P V(1+i)^{\text {n }}$ to isolate $P V$ on the left side.
142.Use the formula $F V=P V(1+i)^{n}$ to calculate $i$ if $P V=\$ 2000, F V=\$ 9321.91$, and $n=20$.
143. Use the formula $P V=F V(1+i)^{-n}$ to calculate $i$ if $P V=\$ 5167.20, F V=\$ 10,000$, and $n=15$.
144.Rearrange the formula $F V=P V(1+i)^{n}$ 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 $\mathrm{km} / \mathrm{h}$ on the "open road," but slowed to $50 \mathrm{~km} / \mathrm{h}$ 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 <br> name | Assessment <br> on residence | Assessment on <br> land <br> and farm <br> buildings | Total prop- <br> 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\%)?
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 the three 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?
186. 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.
190. 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 $88 \mathbb{\$}$ 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?
$201.7 \frac{1}{2} \%$ of what amount is $\$ 1.46$ 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.
$206.81 / 3 \%$ 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 $1 / 2 \%$ 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 $3 / 4 \%$ 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 540 ml 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?

227 . Ivory hand-soap is advertised as being
99 箴 $^{\circ}$ a 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 $=35 \mathrm{~kg}$; Final Value $=135 \mathrm{~kg}$; Percent Change $=$ ? Calculate the answer accurate to the nearest $0.01 \%$.
241. Calculate the missing value: Initial Value $=135 \mathrm{~kg}$; Final Value $=35 \mathrm{~kg}$; 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 $=26.3 \mathrm{~cm}$; 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.
${ }^{262}$.What amount after a reduction of $16 . \overline{6} \%$ 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 $100-\mathrm{g}$ bar is $\$ 1.15$, what should be the price of an $80-\mathrm{g}$ 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: $4(3 a+2 b)(2 b-a)-5 a(2 a-b)$
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.

Simplify and collect the like terms: $\frac{9 y-7}{3}-2.3(, r-2)$
316.

Simplify and collect the like terms:

$$
\left.P \left\lvert\, 1+0.095 \cdot \frac{135}{365}!+\frac{2 P}{(1+0.095} \frac{75}{365}\right.\right)
$$

317.Simplify and combine the like terms: $6(4 y-3)(2-3 y)-3(5-y)(1+4 y)$
318.

Simplify and combine the like terms: $\frac{5 b-4}{4}-\frac{25-b}{1.25}+\frac{7}{8} h$
319.

Simplify and combine the like terms: $\frac{x}{1+0.085 \cdot \frac{63}{365}}+2 x y+0.085 \cdot \frac{151}{365}$ !
320.

Simplify and combine the like terms: $\frac{96 m m^{2}-72 n^{2} m^{2}}{48 n^{2} m}$
321.

$$
P(1+i)^{2}+\frac{S}{1+i t} \text { for } P=\$ 2500, i=0.1025, n=2, S=\$ 1500, r=
$$ 0.09 , and $\quad t=\frac{93}{365}$.

322. Evaluate accurate to the cent: ${ }^{L\left(1-d_{1}\left(1-d_{2}\right) 11-d_{3}\right)}$ for $L=$ $\$ 340, d_{1}=0.15 . t_{2}=0.08, d_{3}-0.05$
323. 

Evaluate accurate to the cent: $\frac{R}{i}\left[1-\frac{1}{11+i r^{\prime \prime}}\right]$ for $R=\$ 575, i=0.085, n=3$
324.

Simplify: $\frac{\left(-3 x^{2}\right)^{3}\left(2 x^{-2}\right)}{6 x^{5}}$
325.

Simplify: $\frac{\left(-2 u^{3}\right)^{2}\left(4 b^{4}\right)^{3}}{\left(-2 b^{3}\right) 0.5 u^{3}}$
326. $\left|-\frac{2 x^{2}}{3}\right|^{-2}\left(\frac{5^{2}}{6 x^{3}}\left|-\frac{15}{x^{5}}\right|^{-1}\right.$

327 .Evaluate to six-figure accuracy: $\quad 11.0075 \boldsymbol{r}^{24}$
328. Evaluate to six-figure accuracy: ${ }^{11.05)^{1 / 6}-1}$
329.

Evaluate to six-figure accuracy: $\frac{(1+0.0075)^{36}-1}{0.0075}$
330.

Evaluate to six-figure accuracy: $\frac{1-(1+0.045)^{-12}}{0.045}$
331.

Evaluate to six-figure accuracy: $\frac{(1.00 \overline{6})^{240}-1}{0.00 \overline{6}}$
${ }^{332}$. Evaluate to six-figure accuracy: $(1+0.025)^{1 / 3}-1$
333.

$$
\frac{2 x}{1+0.13 \frac{92}{365}}+x\left(t+0.13 \cdot \frac{59}{365}\right)=\$ 831
$$

334. 

Solve for $x$ to five-figure accuracy:

$$
3 x\left(1.03^{5}\right)+\frac{x}{1.03^{3}}+x=\frac{\$ 2500}{1.03^{2}}
$$

335. 

Solve for $x$ to five-figure accuracy: $\overline{1.08^{3}}+\frac{1}{2}\{1.08\}^{4}=\$ 850$
336.Solve for $x$ to five-figure accuracy:

$$
2.1+1+0.085 \cdot \frac{77}{365} \left\lvert\,+\frac{x}{\left(1+0.085 \cdot \frac{132}{365}\right)}=\$ 1565.70\right.
$$

337.Use formula (4-2), $N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, to calculate $d_{2}$ if $N=\$ 324.30, L=\$ 498, d_{1}=$ 0.20 , and $d_{3}=0.075$.
338.Use the formula $V f=V i\left(1+c_{1}\right)\left(1+c_{2}\right)\left(1+c_{3}\right)$ to determine $c_{2}$ if $V f=\$ 586.64, V i=\$ 500, c_{1}=$ 0.17 , and $c_{3}=0.09$.
$340.80 \%$ of what amount is $\$ 100 ?$
341. $\frac{3}{4} \%$ of what amount is $\$ 1.00$ ?
342.Fifteen minutes is what percentage of two hours?
343.Solve the following equations.

$$
\begin{aligned}
& 3 x+5 y=11 \\
& 2 x-y=16
\end{aligned}
$$

344.Solve each of the following pairs of equations to three-figure accuracy.
a) $4 a-5 b=30$

$$
2 a-6 b=22
$$

b) $\quad 76 x-29 y=1050$

$$
-213 x-63 y=250
$$

345. Rearrange the formula $F V=P V\left(1+i_{1}\right)\left(1+i_{2}\right)$ 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 $A B C$ Ltd. and $X Y Z$ Inc. One year later the investment was worth $\$ 9310$, after the shares of ABC had increased in value by $15 \%$ and the shares of $X Y Z$ 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?
347. 

Simplify: $\left(\left.\frac{3 a^{3} b^{2}}{a-b}\right|^{4}\right.$
359.

Simplify: $\left|\frac{3}{2 x^{2}}\right|^{2}\left|\frac{6 x^{3}}{5^{2}}\right|-\left.\frac{x}{5}\right|^{-1}$
360.

Simplify: $\frac{(-2 \cdot x)^{3}(x \cdot 4)^{2}}{(x-2)^{2}(4 y)^{2}}$
361.

Simplify: $\frac{\left.(x-1 / 3)\left(x^{2 / 3}\right)\right]^{3 / 2}}{\left(8 x^{3}\right)^{2 / 3}}$
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: $\quad 2 a-1-a 1+4 a-5 a$
364. Simplify: $-+x-[-3 x+2(x-6)]$
365.

Evaluate: ${ }^{R\left[\frac{(1+1)^{n}-1}{\prime}\right]}$ for $R=\$ 1200, i=0.02, n=6$
366. $\frac{(2 x^{4}, y^{2}=\underbrace{2}}{4}$
Simplify:
367. Simplify: $x^{-7}+x^{-4}+x^{3}$
368.
Simplify: $\frac{1-11+00151^{-18}}{\text { (1) }}$
369. Solve for the unknown variable: $3(x-6)+5 x-2(2 x-3)=0$
370.Solve for the unknown variable: $9 x+10=-3 x+3+$
371. Solve for the unknown variable: $150+31+2-61=215$

Solve for the unknown variable:

$$
\frac{x}{(102)^{6}}+3211021^{4}-81000=\frac{8+4009}{(102)^{3}}
$$

373. 

$$
2 x+7 y=-8
$$

Solve for the unknown variable: $5 x-2 y=19$
374.

$$
007 x+038 y^{x}=0394
$$

Solve for the unknown variable: $-613 x+07 y=0.37$
375. $2 \mathrm{y}=5 \mathrm{x}$
Solve for the unknown variable: $3-5 x=0$
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 $11 / 2$ 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: $-a+(2 b-c)-(a-b+c)$
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: $1-(3 x-x y+y)-(-x+y-5 x y)$
A. $1-2 x-2 y-6 x y$
B. $1-2 x-2 y+6 x y$
C. $1-4 x-2 y+6 x y$
D. $1-2 x-2 y+4 x y$
E. $1-4 x-2 y-6 x y$
393.Simplify and collect like terms: $3(x-2 y)(2 x+y)$
A. $6 x^{2}-6 x y-6 y^{2}$
B. $6 x^{2}+10 x y-6 y^{2}$
C. $6 x^{2}-9 x y-6 y^{2}$
D. $6 x^{2}-9 x y+6 y^{2}$
E. $6 x^{2}+10 x y+6 y^{2}$
394.Simplify and collect like terms: $9 x-[4 y-3(x-y)]$
A. $12 x+7 y$
B. $6 x-7 y$
C. $6 x+7 y$
D. $12 x-7 y$
E. $9 x-7 y$
395.Simplify and collect like terms:

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

A. $-1.6 x-14.075$
B. $-1.6 x-15.325$
C. $2.6 x+15.325$
D. $2.6 x-14.075$

$$
\text { E. }-1.6 x+15.325
$$

396. 

Simplify and collect like terms: $\frac{x}{5}+\frac{2}{5}-0.7 x^{2}-\frac{3}{5} x+\frac{3}{4}$
A. $-617 x^{2}-4 x+115$
B. $97 x^{2}-4 x+115$
C. $-0.7 x^{2}-.4 x+35$
D. $07 x^{2}-4 x+35$
E. $-97 x^{2}+8 x+115$

$$
\frac{\rho}{1+0.07 \times \frac{5}{12}}+2 P\left(1+0.07 \times \frac{4}{12}\right)
$$

A. $3.076 F$
B. $3.018 F$
C. $2.787 F$
D. $3.532 F$
E. $2.956 F$
398.

Simplify and collect like terms:

$$
x\left(1+0.045 \times \frac{55}{365}\right)+\frac{2.5}{\left(1-0.045 \times \frac{200}{365}\right)}
$$

A. $2.957 x$
B. $2.208 x$
C. $3.057 x$
D. $2.068 x$
E. $1.983 x$
399. Simplify and collect like terms: $\frac{\frac{12 x \cdot-6 y^{2}}{3 y}}{3}$
A. $4 x+2 y$
B. $4 x-2 y$
C. $4 x y+2 y^{2}$
D. $4 x-2 y$
E. $4 x-2 \cdot 2$
400.

$$
\frac{10 x x^{2}-15 x^{3} y^{2}+25 x y^{4}}{5 x^{4}}
$$

A. $2 y^{2}-3 x^{2} y+5 y^{4}$
B. $2 x y-3 x^{2} y+5 y^{2}$
C. $2 y-3 x^{2} y+5 y$
D. $2 y^{2}-3 x^{2}+5$
E. $2 y-3 x^{2} y+5 y^{3}$
401.Evaluate the following expression: $3 x+4 y-6 x y$, for $x=2, y=-3$
A. 30
B. -42
C. 54
D. -18
E. 24
402.

Evaluate the following expression: $P(1+r)$, for $P=\$ 1575, r=.055, \quad t=\frac{168}{365}$
A. $\$ 39.87$
B. $\$ 1614.87$
C. $\$ 1973.71$
D. $\$ 16,128$
E. $\$ 724.96$
403. Simplify the following: $u^{2} a^{b} a$
A. $a^{8}$
B. $a^{7}$
C. $a^{9}$
D. $d^{d^{2}}$
E. $a^{13}$
404. Simplify the following: ${ }^{1 u^{2} \mu u^{-3} \mu u^{3} \mid}$
A. $d^{11}$
B. ${ }^{a}$
C. $a^{-36}$
D. $a^{-1}$
E. $a^{-s}$
405. Simplify the following: $b^{t} \div h^{2}$
A. $b^{+}$
B. $b^{10}$
C. $b^{16}$
D. $b^{-6}$
E. $b^{6}$
406. Simplify the following: $y^{y^{3}+y^{-3}}$
A. $y^{13}$
B. $y^{3}$
C. $r^{-40}$
D. $0^{14}$
E. $y^{-1:}$
407. Simplify the following: $\left(x^{s}\right)^{4}$
A. $x^{9}$
B. $x^{20}$
C. $x$
D. $x^{-1}$
E. $x^{0}$
408. Simplify the following: ${ }^{\left(2 x^{3}\right)^{3}}$
A. $10 n^{13}$
B. $32 x^{8}$
C. $32 x^{15}$
D. $2 x^{n}$
E. $2 x^{8}$
409.

Simplify the following: $\frac{\frac{1 y^{2} ห x k x^{-3}}{x^{-4}}}{}$
A. $x^{-1}$
B. $x^{6}$
C. $x^{-2}$
D. ${ }^{-}$
E. $x^{2}$
410.

Simplify the following: $\frac{\left(a^{3}\right)^{-2}}{u^{6}}$
A. $a^{0}$
B. ${ }^{a}$
C. $a^{-11}$
D. $a^{-5}$
E. $a^{-12}$
411.
Simplify the following: $\frac{2 a^{3} b^{2}+4}{a^{2} b^{3}}$
A. $16 a^{10} b^{4}$
B. $2 a^{10} b^{5}$
C. $16 a^{4} b^{4}$
D. $2 a^{3} b^{5}$
E. $16 a^{2} b^{3}$
412.

Simplify the following: $\left.\backslash \frac{4 x}{2 x^{3}}\right|^{2}\left|\frac{3 y^{2}}{2 y^{3}}\right|^{2}\left|\frac{3 x y}{5}\right|^{-1}$
A. $\frac{5 x^{2}}{16 y^{3}}$
B. $\frac{15 x^{3}}{16 y^{3}}$
C. $\frac{5 x^{3}}{8 y^{2}}$
D. $\frac{15 x^{3}}{4 y^{3}}$
E. $\frac{5 x^{2}}{8 y^{2}}$
413. Evaluate the following: $25^{3 i+}$
A. 8.6
B. 37.5
C. 125
D. 5
E. 625
414. Evaluate the following: $-16 \%$
A. 32
B. 64
C. -64
D. -32
E. 10
415.

Evaluate the following: $\sqrt[4]{122189 r^{2}}$
A. $14,857.17$
B. 487.56
C. 3714.29
D. 60.945
E. 11.04
416.

Evaluate the following: $\frac{104^{10}-1}{004}$
A. 12.006
B. 698.137
C. 1.201
D. 36.006
E. 35.58
417.

Evaluate the following: $\frac{1055^{6}-1}{0055}$
A. 233.95
B. 6.888
C. 0.689
D. 23.395
E. 23.763
418.

Evaluate the following: $\frac{\frac{1-1675^{-5}}{19075}}{}$
A. -5.857
B. -10.446
C. 5.857
D. 0.5857
E. 13.485
419.

Evaluate the following: $\frac{1-1056^{-15}}{0(156}$
A. -9.971
B. -22.579
C. 58.29
D. 9.971
E. 25.743
420.

$$
\left|\frac{4}{3}\right|\left|\frac{3}{4}\right|^{-1}\left|\frac{4}{3}\right|^{-4}
$$

Evaluate the following:
A. $\frac{t}{3}$
B. $\frac{3}{4}$
C. $\frac{16}{3}$
D. $\frac{4}{9}$
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: $8-(2 x+4 y-3)-(4 y+10)$
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 $(5 x-2 y)(x-2 y)=$
A. $5 x^{2}-12 x y-4 y^{2}$
B. $5 x^{2}+8 x y-4 y^{2}$
C. $5 x^{2}-12 x y+4 y^{2}$
D. $5 x^{2}-8 x y+4 y^{2}$
E. $5 x^{2}+12 x y+4 y^{2}$
441.Solve the following equation $2(b-2)-(b-2)=$
A. $b+6$
B. $3 b-2$
C. $3 b+2$
D. $b-2$
E. $b-6$
442. Evaluate: $-4(r-t)-(2 r-4 t)$ for $r=1 / 2$ and $t=1 / 4$.
A. 1
B. 5
C. 3
D. -5
E. -1
443.

Solve the following equation $\frac{6 a+9}{3}-4(a-1)=$
A. $-2 a+13$
B. $-2 a-1$
C. $-2 a+7$
D. $2 a+7$
E. 2a-1
444.Evaluate: $L\left(1-d_{1}\right)\left(1-d_{2}\right)$ 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. $\$ 600.00$
445. Solve the following equation ${2.48832^{1 / 5}=}^{2}=$
A. 95.396217
B. 0.0104826
C. 1.2
D. 3.0
E. 0.8333333
446.

Solve the following equation $\binom{r^{3} t^{4}}{t}^{3}=$
A. $9 \varphi^{4}$
B. 166
C. $16 f^{7}$
D. $\rho^{\rho} t^{11}$
E. $\mu \rho$
447.

Solve the following equation

A. ${ }^{5}$
B. $r^{17 / 12}$
C. $r^{12}$
D. $r^{2}$
E. $\beta^{36}$
448.Solve the following equation $\left(8^{2}\right)\left(2^{-4}\right)(-2)^{2}=$
A. 1024
B. 256
C. 4
D. 48
E. 16
449.

Solve for $\mathrm{x}: 2 x+\frac{1}{8}^{\mathrm{x}}=x+10$
A. $3 \frac{1}{5}$
B. $8 \frac{8}{9}$
C. $-3 \frac{1}{5}$
D. $4 \frac{12}{17}$
E. $\frac{9}{80}$
450.Solve for $x .2 / 3(x+3)=-1 / 2(6 x+20)+15$
A. $2 \frac{5}{6}$
B. $\frac{9}{11}$
C. 1.5
D. $-2 \frac{13}{22}$
E. 3.875
451.

Solve for $x .^{-\left(\frac{1}{2} x-5\right)}=2 x-10$
A. 6
B. -6
C. -10
D. $3 \frac{1}{3}$
E. 10
452.

Solve for $x \cdot \frac{x}{1.5^{2}}+3 x(1.5)^{2}=100$
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
458.What number is $25 \%$ less than $96 ?$
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. $87 \frac{1}{2}{ }^{\circ}$ 。 less than 250 ?
A. 218.75
B. 468.75
C. 133.33
D. 383.33
E. 31.25
462. After adding $2 \frac{1}{4}{ }^{\circ}$ o 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. $\$ 357.43$
$467 . \$ 100$ is what percent less than $\$ 125$ ?
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
473.How much is 50 increased by $300 \%$ ?
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
479. Solve for $x$ and $y$.

$$
\begin{aligned}
& x+y=40 \\
& -x+y=-20
\end{aligned}
$$

A. $x=30 ; y=10$
B. $x=-10 ; y=30$
C. $x=-30 ; y=-10$
D. $x=-60 ; y=20$
E. $x=-60 ; y=-20$
480. Solve for $x$ and $y$.

$$
\begin{aligned}
& 2 x+3 y=7 \\
& 3 x-y=5
\end{aligned}
$$

A. $x=6 ; y=2$
B. $x=-2 ; y=1$
C. $x=-2 ; y=-1$
D. $x=2 ; y=1$
E. $x=2 ; y=-1$
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:

$$
y=-0.2 x+4.2
$$

$$
x-0.5 y=10
$$

A. $x=11 ; y=2$
B. $x=2 ; y=11$
C. $x=11 ; y=6.4$
D. $x=6.45 ; y=2.9$
E. $x=6.4 ; y=11$

## c2 Key

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

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: Wora
2. Simplify and collect the like terms: $(5 s-2 t)-(2 s-4 t)$
$3 s+2 t$

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: $4 x^{2} y+\left(-3 x^{2} y\right)-\left(-5 x^{2} y\right)$
$6 x^{2} y$

Difficulty: Easy
Jerome - Chapter 02 \#3
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texl
Topic: Algebra Type: Wora
4. Simplify and collect the like terms: $1-\left(7 e^{2}-5+3 e-e^{3}\right)$
$e^{3}-7 e^{2}-3 e+6$

Difficulty: Easy
Jerome - Chapter O2 \#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: $\left\{0 x^{2}-3 x y+4 y^{2}\right)-\left(8 y^{2}-10 x y-x^{2}\right\}$
$7 x^{2}+7 x y-4 y^{2}$
6. Simplify and collect the like terms: $\left(7 m^{3}-m-6 m^{2}+70\right)-\left(5 m^{3}-9+3 m-2 m^{2}\right)$
$2 m^{3}-4 m^{2}-4 m+19$

Difficulty: Easy
Jerome - Chapter 02 \#6
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texl
Topic: Algebra
Type: Wora
7. Simplify and collect the like terms: $2(7 x-3 y)-3(2 x-3 y)$
$8 x+3 y$

Difficulty: Easy
Jerome - Chapter O2 \#7

Source: Student text
Topic: Algebra
Type: Wora
8. Simplify and collect the like terms: $4\left(a^{2}-3 a-4\right)-2\left(5 a^{2}-a-6\right)$
$-6 a^{2}-10 a-4$
9. Simplify and collect the like terms: $15 x-[4-2(5 x-6)]$
$25 x-16$

Difficulty: Easy
Jerome - Chapter 02 \#S
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: $6 a-[3 a-2(2 b-a)]$
$a+4 b$

Difficulty: Medium
Jerome - Chapter 02 \#10
11. Perform the operation indicated and collect the like terms: $4 a(3 a b-5 a+6 b)$
$12 a^{2} b-20 a^{2}+24 a b$

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: $9 k\left(4-8 k+7 k^{2}\right)$
$36 k-72 k^{2}+63 k^{3}$

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: $-5 x y\left(2 x^{2}-x y-3 y^{2}\right)$
$-10 x^{3} y+5 x^{2} y^{2}+15 x y^{3}$

Difficulty: Easy
Jerome - Chapter 02 \#13
14.

Perform the operation indicated and collect the like terms:

$$
-\left(p^{2}-4 p q-5 p\right)\left(\frac{2 q}{p}\right)
$$

$$
-2 p q+8 q^{2}+10 q
$$

15. Perform the operation indicated and collect the like terms: $(4 r-3 t)(2 t+5 t)$
$20 r^{2}-7 r t-6 t^{2}$

Difficulty: Easy
Jerome - Chapter 02 \#15
16. Perform the operation indicated and collect the like terms: $\left(3 p^{2}-5 p\right)(-4 p+2)$
$-12 p^{3}+26 p^{2}-10 p$

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: $3(a-2)(4 a+1)-5(2 a+3)(a-7)$
$2 a^{2}+34 a+99$

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

$$
24 x^{2}+25 x y-5 y^{2}
$$

19. 

Perform the operation indicated and collect the like terms: $\frac{18 x^{2}}{3 x}$
$6 x$

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: $\frac{\frac{6 a^{2} b}{-2 c b^{2}}}{}$
$-7 \frac{a}{b}$

Difficulty: Easy
Jerome - Chapter 02 \#20
21.

Perform the operation indicated and collect the like terms:

## 3

$x-y$

Difficulty: Easy
Jerome - Chapter 02 \#21
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texl
Topic: Algebra
Type: Wora
22.

Perform the operation indicated and collect the like terms: $\frac{-4 x^{x}+10 x^{2}-6 x^{3}}{-0.5 x}$
$8-20 x+12 x^{2}$

Difficulty: Easy
Jerome - Chapter 02 \#22
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texi
Topic: Algebra
Type: Wora
23.

Perform the operation indicated and collect the like terms: $\frac{12 x^{3}-24 x^{2}+36 x}{48 x}$
$\frac{x^{2}-2 x+3}{4}$

Difficulty: Easy
Jerome - Chapter 02 \#23
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texi
Topic: Algebra
Type: Wora
24.

Perform the operation indicated and collect the like terms: $\frac{32_{i}{ }^{2} b-8 \omega b+14 u b^{2}}{2 \omega}$
$16 a-4+7 b$

Difficulty: Easy
Jerome - Chapter 02 \#24

Source: Student texi
Topic: Algebra
Type: Wora
25.

Perform the operation indicated and collect the like terms:
$\frac{4 a^{2} b^{3}-6 a^{3} b^{2}}{2 a b^{2}}$

## $2 a b-3 a^{2}$

26. 

Perform the operation indicated and collect the like terms:

$$
\frac{12011+i)^{2}+180(1+i)^{3}}{360(1+i)}
$$

## $2(1+i)+3(1+i)^{2}$

27. Evaluate the following expression for the given value of the variable:
$3 d^{2}-4 d+15$ 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:
$15 g-9 h+3$ for $g=14, h=15$

## 78

Difficulty: Easy
Jerome - Chapter 02 \#28
29. Evaluate the following expression for the given value of the variable:
$7 x(4 y-8)$ for $x=3.2, y=1.5$
-44.8

Difficulty: Easy
Jerome - Chapter 02 \#2S
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:
/, Prfor $P=\$ 500, I=\$ 13.75, r=0.11$
0.250

Difficulty: Easy
Jerome - Chapter 02 \#30
31. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\frac{I}{F}$ for $r=0.095, I=\$ 23.21, \quad t=\frac{283}{365}$
\$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 accurate to the nearest cent: $\frac{\frac{N}{1-d}}{}$ for $N=\$ 89.10, d=0.10$
$\$ 99.00$

Difficulty: Easy
Jerome - Chapter 02 \#32
33. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $L\left(1-d_{1}\right)\left(1-d_{2} \times 1-d_{3}\right)$ 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 texl

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: $P^{P(1+m)}$ for $P=\$ 770, r=0.13, \quad t=\frac{223}{\mathbf{3 6 5}}$
$\$ 776.12$

Difficulty: Medium
Jerome - Chapter 02 \#34
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texi
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: ${ }^{\frac{S}{1+r t}}$ for $S=\$ 2500, r=0.085, \quad t=\frac{123}{365}$
\$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 texi
Topic: Algebra
Type: Wora
36. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\frac{s}{1+t^{n}}$ for $S=\$ 850, i=0.0075, n=6$
$\$ 812.73$

Difficulty: Easy
Jerome - Chapter 02 \#36
37. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $P(1 i)^{n}$ 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:
$\frac{x}{2} x^{2}+\frac{4}{5} 0.2 x^{4} \frac{4}{5} x+\frac{1}{2}$
$-1.2 x^{2}-0.3 x+1.3$
39. Simplify the following expression and collect the like terms:
$\frac{2 x+9}{4} 1.2(x-1)$
$-0.7 x+3.45$

Difficulty: Medium
Jerome - Chapter 02 \#3S
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texi
Topic: Algebra Type: Wora
40. Simplify the following expression and collect the like terms:

$$
\frac{2 x}{1.045}-\frac{2.016 x}{3}+\frac{x}{2}
$$

$1.7419 x$

Difficulty: Medium
Jerome - Chapter 02 \#40
41. Simplify the following expression and collect the like terms:

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

$18.8 x-8.5$

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

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

2.8685y

Difficulty: Hara
Jerome - Chapter 02 \#42
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
43. Simplify the following expression and collect the like terms. Maintain five-figure accuracy.

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

$3.0509 P$

Difficulty: Hara
Jerome - Chapter 02 \#43
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texi
Topic: Algebra
Type: Wora
44. Simplify the following expression and collect the like terms. Maintain five-figure

$$
\frac{h}{\left.(i+0.055)^{2}\right)} 3 h(1+0.055)^{3}
$$

$-2.6243 h$
45. Simplify the following expression and collect the like terms. Maintain five-figure accuracy. $k(1+$ $0.04)^{2}+\frac{2 k}{(1+0.04)^{2}}$
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: Wora
46. Evaluate the following expression for the given value of the variable: ${ }^{\mid 1+1 j^{\prime \prime \prime}-1}$ for $\mathrm{i}=0.0225$, $m=4$
0.093083
47. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\quad R\left[\frac{i 1+i i^{\prime}-1}{1}\right]$ 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 texl
Topic: Algebra
Type: Wora
48. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\left.: \frac{\left[(1+i)^{\prime \prime}-1\right.}{1}\right](1+t)$ 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 tex 1
Topic: Algebra
49. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $\frac{R}{i}\left[1-\frac{1}{(1+i)^{2}}\right]$ for $R=\$ 630, i=0.115, n=2$
50. Evaluate the following expression for the given value of the variables and calculate the result accurate to the nearest cent: $P\left\{1+i 7_{1}\right\}+\frac{S}{1+I_{2}}$ for $P=\$ 470, S=\$ 390, r=$ $0.075, \quad t_{1}=\frac{104}{365} . \quad r_{2}=\frac{73}{365}$ 0.075,
$\$ 864.28$
51.

Simplify the following: $a^{2} \times a^{3}$
$a^{5}$
54.

## Simplify the following: $\boldsymbol{h}^{\prime \prime} \div \boldsymbol{h}^{-1}$

## $h^{11}$

Difficulty: Easy
Jerome - Chapter 02 \#54
Learning Objective: 02-02 Solve a linear equation in one variable.
Source: Student text
Topic: Algebra
Type: Wora
55.
Simplify the following: $\{1+1)^{4} \quad(1+1)^{9}$

$$
(1+1)^{13}
$$

56. Simplify the following: ${ }^{11+1)}\left(1+\left.i\right|^{\prime \prime}\right.$
$(1+i)^{n+1}$

Difficulty: Easy
Jerome - Chapter 02 \#56

Source: Student text
Topic: Algebra
Type: Wora
57.
$x^{28}$

Difficulty: Easy
Jerome - Chapter 02 \#57

Source: Student text
Topic: Algebra
Type: Wora
58.

Simplify the following: $\left(3^{3}\right)^{3}$
$y^{9}$
59.

## $t^{2}$

## Simplify the following: $\left({ }^{6}\right)^{1 / 3}$

## Simplify the following:

$$
x^{2}
$$

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

62. 
63. 

## $4(1+i)^{2}$

64. 

$$
\text { Simplify the following: }\left|\frac{1+t}{3}\right\rangle^{3}
$$

Simplify the following:

$$
\frac{(t+i)^{3}}{27 i^{3}}
$$

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

Difficulty: Medium
Jerome - Chapter 02 \#65

Source: Student text
Topic: Algebra
66.

Simplify the following:
$-4 r^{11}$

Difficulty: Medium
Jerome - Chapter 02 \#66
Learning Objective: 02-02 Solve a linear equation in one variable.
Source: Student texi
Topic: Algebra
Type: Wora
67.

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

16

Difficulty: Easy
Jerome - Chapter 02 \#67
Learning Objective: 02-02 Solve a linear equation in one variable.
Source: Student texi
Topic: Algebra
Type: Wora
68.

Evaluate the following expression to six-figure accuracy: $\left(-27^{2 / 3}\right)$
-9
69. Evaluate the following expression to six-figure accuracy: $7^{3 / 2}$
18.5203

Difficulty: Easy
Jerome - Chapter 02 \#6S
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: Wora
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: Wora
73. Evaluate the following expression to six-figure accuracy: ${ }^{11.0085}{ }^{5}\left\{1.0085 \beta^{3}\right.$
1.07006
74. Evaluate the following expression to six-figure accuracy: ${ }^{\{1.005} \boldsymbol{1}^{3} 11.005 \tau^{6}$
0.985149

Difficulty: Easy
Jerome - Chapter 02 \#74
Learning Objective: 02-02 Solve a linear equation in one variable.
Source: Student texl
Topic: Algebra Type: Wora
75. Evaluate the following expression to six-figure accuracy: $\sqrt[3]{1.03}$
1.00990

Difficulty: Easy
Jerome - Chapter 02 \#75
76.

Evaluate the following expression to six-figure accuracy:
1.00816

Difficulty: Easy
Jerome - Chapter 02 \#76
Learning Objective: 02-02 Solve a linear equation in one variable.
Source: Student text
Topic: Algebra
77.

Evaluate the following expression to six-figure accuracy:
$\left(4^{4}\right)\left(3^{-3}\right)-\frac{3}{4} j^{3}$
-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:

$$
\left[\begin{array}{l}
8: 8]^{3}
\end{array}\right.
$$

3.16049
79.

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

$$
\left.\left|\frac{2}{3}\right|^{3}\left|-\frac{3}{2}\right|^{2} \right\rvert\,-\frac{3}{2} i^{-3}
$$

$-0.197531$

Difficulty: Medium
Jerome - Chapter 02 \#79

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
Evaluate the following expression to six-figure accuracy: $\frac{1.03^{16}-1}{0.03}$
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
82.

Evaluate the following expression to six-figure accuracy: $\frac{(1.008 \overline{3})^{30}-1}{0.008 \overline{3}}$
33.9235

Difficulty: Medium
Jerome - Chapter 02 \#82

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 texi
Topic: Algebra
Type: Wora
84.

Evaluate the following expression to six-figure accuracy: $\frac{1-(1.00 \overline{6})^{-32}}{0.00 \overline{6}}$
28.7312

Difficulty: Medium
Jerome - Chapter 02 \#84
Learning Objective: 02-02 Solve a linear equation in one variable.
Source: Student texl
Topic: Algebra
Type: Wora
85. Evaluate the following expression to six-figure accuracy: $(1+0.0275)^{1 / 3}$
1.00908
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 texl
Topic: Algebra
Type: Wora
87. Solve the following equation: $10 a+10=12+9 a$
$a=2$

Difficulty: Easy
Jerome - Chapter 02 \#87

Source: Student text
Topic: Algebra
Type: Wora
88. Solve the following equation: $29-4 y=2 y-7$

$$
y=6
$$

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 \#8S

Source: Student tex 1
Topic: Algebra
Type: Wora
90. Solve the following equation: ${ }^{\frac{1}{3}}(x-2)=4$
$x=14$
91. Solve the following equation: $y=192+0.04 y$

$$
y=200
$$

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: $x-0.025 x=341.25$
$x=350$

Difficulty: Easy
Jerome - Chapter 02 \#92

Source: Student text
Topic: Algebra
Type: Wora
93. Solve the following equation: $12 x-4(2 x-1)=6(x+1)-3$
$x=0.5$
94. Solve the following equation: $3 y-4=3(y+6)-2(y+3)$

$$
y=8
$$

Difficulty: Easy
Jerome - Chapter 02 \#94
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student text
Topic: Algebra
Type: Wora
95. Solve the following equation: $8-0.5(x+3)=0.25(x-1)$

$$
x=9
$$

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

$$
c=8
$$

Difficulty: Easy
Jerome - Chapter 02 \#96
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student texi
Topic: Algebra
Type: Wora
97. Solve the following equation: $3.1 t+145=10+7.6 t$
$t=30$

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: $1.25 y-20.5=0.5 y-11.5$
$y=12$
99. Solve the following pair of equations. Verify your solution.
$x-y=2$
$3 x+4 y=20$
$(4,2)$

Difficulty: Easy
Jerome - Chapter 02 \#9S
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student text
Topic: Algebra
Type: Wora
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
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: Wora
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
103. Solve the following pair of equations. Verify your solution.
$y=2 x$
$7 x-y=35$
$(7,14)$

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.
$g-h=17$

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

$(-8,9)$

Difficulty: Medium
Jerome - Chapter 02 \#104

Source: Student text
Topic: Algebra
105. Solve the following pair of equations to three-figure accuracy. Verify your solution. $d=3 c-500$
$0.7 c+0.2 d=550$
(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: Wora
106. Solve the following pair of equations to three-figure accuracy. Verify your solution. $0.03 x+$ $0.05 y=51$
$0.8 x-0.7 y=140$
$(700,600)$

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

$$
\begin{aligned}
& 2 v+6 w=1 \\
& -9 w+10 v=18 \\
& \left(\frac{3}{2} .-\frac{1}{3}\right)
\end{aligned}
$$

Difficulty: Medium
Jerome - Chapter 02 \#107
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student texi
Topic: Algebra
Type: Wora
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)
109. Solve the following pair of equations to three-figure accuracy. Verify your solution.
$37 x-63 y=235$
$18 x+26 y=468$
(17.0, 6.24)

> Difficulty: Medium
> Jerome - Chapter 02 \#10s
> Learning Objective: 02-03 Solve two linear equations in two variables.
> Source: Student text
> Topic: Algebra
> Type: Wora
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)
111. Solve the following pair of equations to three-figure accuracy. Verify your solution.
$0.33 e+1.67 f=292$
$1.2 e+0.61 f=377$
$(250,125)$

Difficulty: Medium
Jerome - Chapter 02 \#111
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student text
Topic: Algebra
Type: Wora
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)
113.

Solve the following equation accurate to the cent: $\frac{x}{1.1^{2}}+2 x(1.1)^{3}=\$ 1000$
$x=\$ 286.66$

Difficulty: Medium
Jerome - Chapter 02 \#113
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Student texl
Topic: Algebra
Type: Wora
114.
$x=\$ 694.13$

Difficulty: Medium
Jerome - Chapter 02 \#114

Source: Student text
Topic: Algebra
Type: Wora
115. Solve the following equation accurate to the cent:

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

$x=\$ 699.47$

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:

$$
x(1.05)^{3}+\$ 1000+\frac{x}{1.05^{-}}=\frac{\$ 50 \% 0}{1.05^{2}}
$$

$x=\$ 1892.17$
117. Solve the following equation accurate to the cent:

$$
i+1+0.095 \cdot \frac{84}{365} \dot{\mid}+\frac{2 x}{\left(1+0.095 \cdot \frac{108}{365}\right)}=\$ 1160.20
$$

$$
x=\$ 391.01
$$

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

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

$x=\$ 247.79$
119. Use formula (6-1), $I=P r t_{s}$, to calculate $P$ if $r=0.05, i=\$ 6.25$, and $t=0.25$.
$\$ 500.00$

Difficulty: Easy
Jerome - Chapter 02 \#11S
Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable
Source: Student texl
Topic: Algebra
Type: Wora
120.
 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 $P M T$ 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
121. Use formula (6-2), $S=P(1+r t)$, 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: Wora
123. Use formula (4-1), $N=\angle(1-d)$, to calculate $d$ if $N=\$ 410.85$ and $L=\$ 498.00$.
0.175

Difficulty: Easy
Jerome - Chapter 02 \#123
124. Use formula (6-2), $S=P(1+r t)$, 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 texl
Topic: Algebra
Type: Wora
125. Formula $(5-3), N I=(C M) X-F C$, contains three two-letter symbols. Use it to calculate $C M$ if $N I=\$ 15,000, X=5000$, and $F C=\$ 60,000$.
$\$ 15.00$

Difficulty: Easy
Jerome - Chapter 02 \#125
126. Use formula (5-3), $N /=(C M) X-F C$, to obtain $X$ if $N I=-\$ 542.50, C M=\$ 13.50$, and $F C=$ \$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: Wora
127. Use formula (4-2), $N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, 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

Source: Student text
Topic: Algebra
Type: Wora
128. Use formula (4-2), $N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, 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
129. Use the formula $F V=P V\left(1+i_{1}\right)\left(1+i_{2}\right)\left(1+i_{3}\right)$ to determine $i_{1}$ if $P V=\$ 1000, F V=\$ 1094.83, i_{2}$ $=0.03, i_{3}=0.035$.
0.0270

Difficulty: Easy
Jerome - Chapter 02 \#12S
Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable.
Source: Student text
Topic: Algebra
Type: Wora
130. Use formula (10-1), $=P M T\left[\frac{\left(1+0^{i n}-1\right.}{i}\right]$, to obtain $P M T$ if $F V=\$ 1508.54, n=4$, and $i=0.05$.
$\$ 350.00$
131. Use formula (10-2), $\quad P V=P M T\left[\frac{1-(1+)^{-\pi}}{i}\right]$, to obtain $P M T$ if $P V=\$ 6595.20, n=20$, and $i=$ 0.06 .
$\$ 575.00$

Difficulty: Easy
Jerome - Chapter 02 \#131
Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable.
Source: Student texl
Topic: Algebra
Type: Wora
132. Rearrange formula (6-1), I= Prt, to isolate $t$ on the left side.
$t=\frac{I}{\mathrm{Pr}}$

Difficulty: Easy
Jerome - Chapter 02 \#132

Source: Student texl
Topic: Algebra
Type: Wora
133. Rearrange formula (13-1), $\boldsymbol{P V}=\frac{\boldsymbol{N} \boldsymbol{N}}{i}$, to isolate $i$ on the left side.
$t=\frac{P \mathrm{M} / T}{P \mathrm{I}^{*}}$

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: Wora
134. Rearrange formula (4-1), $N=\angle(1-d)$, to isolate $d$ on the left side.

$$
d=1-\frac{V}{L}
$$

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 $(5-3), N I=(C M) X-F C$, to isolate $C M$ on the left side.
$C M=\frac{N+F C}{M}$
136. Rearrange formula (5-3), $N /=(C M) X-F C$, to isolate $X$ on the left side.

$$
\mathrm{I}=\frac{\mathrm{N}+F C}{C M}
$$

Difficulty: Easy
Jerome - Chapter O2 \#136
Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable.
Source: Student texi
Topic: Algebra
Type: Wora
137. Rearrange formula ( $6-2), S=P(1+r t)$, to isolate $r$ on the left side.

$$
r=(S-P) \cdot P r
$$

Source: Student text
Topic: Algebra
138. Rearrange formula (6-2), $S=P(1+r t)$, to isolate $t$ on the left side.

$$
t=(S-P) \operatorname{Pr}
$$

139. Rearrange formula $(4-2), N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, to isolate $d_{1}$ on the left side.

$$
d_{1}=1-\frac{V}{L\left(1-d_{2}\right)\left(1-d_{3}\right)}
$$

Difficulty: Easy
140. Rearrange formula $(4-2), N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, to isolate $d_{3}$ on the left side.
$d_{3}=1-\frac{N}{L\left(1-d_{1}\right)\left(1-d_{2}\right)}$
141. Rearrange the formula $F V=P V(1+i)^{n}$ to isolate $P V$ on the left side.

```
PV=FI}(1+t\mp@subsup{)}{}{\prime
```

Difficulty: Easy
Jerome - Chapter 02 \#141
Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable.
Source: Student texi
Topic: Algebra
Type: Wora
142. Use the formula $F V=P V(1+)^{n}$ to calculate $i$ if $P V=\$ 2000, F V=\$ 9321.91$, and $n=20$.
0.0800

Difficulty: Medium
Jerome - Chapter 02 \#142
143. Use the formula $P V=F V(1+i)^{-n}$ to calculate $i$ if $P V=\$ 5167.20, F V=\$ 10,000$, 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 $F V=P V(1+i)^{n}$ to isolate $i$ on the left side.
$i=\left(\frac{F V}{P V}\right)^{1 / n}-1$

Difficulty: Medium
Jerome - Chapter 02 \#144
Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable.
Source: Student texi
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 texi
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
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: Wora
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?

1253/4 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: Wora
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: Hara
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
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 texi
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: Hara
Jerome - Chapter 02 \#155
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: Hara
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 texi
Topic: Algebra
Type: Wora
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 texi
Topic: Algebra
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 texl
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: Hara
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
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: Wora
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
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
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: Wora
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
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 texi
Topic: Algebra
Type: Wora
167. Tina drove from Calgary to Vancouver, a distance of 1000 km, in 12.3 hours. She drove at 100 $\mathrm{km} / \mathrm{h}$ on the "open road," but slowed to $50 \mathrm{~km} / \mathrm{h}$ 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 $50 \mathrm{~km} / \mathrm{h} ; 770 \mathrm{~km}$ at $100 \mathrm{~km} / \mathrm{h}$

Difficulty: Hara
Jerome - Chapter 02 \#167
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: Hara
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 texi
Topic: Algebra
Type: Wora
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: Hara
Jerome - Chapter 02 \#165
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: Hara
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 tex 1
Topic: Algebra
Type: Wora
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 texi
Topic: Algebra
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 | Assessmient on land and farm buildings | Total property tax |
| :---: | :---: | :---: | :---: |
| Mr. LeClair | \$ 400,000 | \$300,000 | \$3870 |
| Mrs. 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 $Y$
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
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 texl
Topic: Algebra
Type: Wora
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
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: Wora
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 \#17S
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 texi
Topic: Algebra
Type: Wora
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: Hara
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 texl
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: Hara
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
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: Hara
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: Wora
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: Hara
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
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: Hara
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: Wora
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 texl

Topic: Algebra
Type: Concept
186.

What is the percent Rate if a quantity is $\frac{100}{1000}$ of the Base?
0.1\%

# 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 texl
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 texi
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 texi
Topic: Algebra
Type: Wora
190. 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 texi
Topic: Algebra
Type: Wora
191. What percent is $\$ 1.50$ of $\$ 11.50$ ? Calculate to three-figure accuracy.
13.0\%

Difficulty: Easy
Jerome - Chapter 02 \#191
Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third.
192. What percent is $88 \mathbb{C}$ 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: Wora
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 texi

Topic: Algebra
Type: Wora
194. $\$ 69$ is $30 \%$ of what amount accurate to the cent?
$\$ 230.00$

# 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
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. $71 / 2 \%$ 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 texi

Topic: Algebra
Type: Wora
202. $123 / 4 \%$ of what amount is $\$ 27.50$ accurate to the cent?
$\$ 215.69$

## 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

## 205. $95 \%$ of what amount is $\$ 100$ accurate to the cent?

\$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. $81 / 3 \%$ 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\%
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 texl

Topic: Algebra
Type: Wora
209. How much is $1 / 2 \%$ of $\$ 10$ accurate to the cent?
$\$ 0.05$

Difficulty: Easy
Jerome - Chapter 02 \#20S
Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third. Source: Student texi

Topic: Algebra
Type: Wora
210. $0.75 \%$ of $\$ 100$ is what amount accurate to the cent?
$\$ 0.75$

## 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 texl
Topic: Algebra
Type: Wora
213. $1301 / 2 \%$ of $\$ 455$ is what amount accurate to the cent?
$\$ 593.78$

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 O2 \#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.
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: Wora
218. $\$ 1.25$ is $3 / 4 \%$ 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 \#21S
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 540 ml can of $\mathrm{K}-9$ 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 texl

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
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 texl

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 texl
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
227. Ivory hand-soap is advertised as being 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 texl

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
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: Hara
Jerome - Chapter 02 \#22S
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
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: Hara
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: Wora
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
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 O2 \#234
Learning Objective: 02-06 Given any two of the three quantities: percent rate; portion; and base; solve for the third.
Source: Student texl
Topic: Algebra
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 texi
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\%
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: Wora
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
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 $=35 \mathrm{~kg}$; Final Value $=135 \mathrm{~kg}$; Percent Change $=$ ? Calculate the answer accurate to the nearest $0.01 \%$.
285.71\%

Difficulty: Easy
Jerome - Chapter 02 \#24C
Learning Objective: 02-07 Solve problems involving percent change.
Source: Student text
Topic: Algebra
Type: Wora
241. Calculate the missing value: Initial Value $=135 \mathrm{~kg}$; Final Value $=35 \mathrm{~kg}$; 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: Wora
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 texl
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: Wora
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: Wora
245. Calculate the missing value: Initial Value = 112g; Final Value =? Percent Change $=112 \%$.
237.44 g
246. Calculate the missing value: Initial Value $=26.3 \mathrm{~cm}$; Final Value $=$ ? Percent Change $=300 \%$
105.2 cm

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
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: Wora
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 \#24S
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\%
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: Wora
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 texi
Topic: Algebra
Type: Wora
255. How much is $\$ 56$ increased by $65 \%$ ? Calculate the answer accurate to the cent.
$\$ 92.40$
256. $\quad \$ 754.30$ 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 \#255
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
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 texl
Topic: Algebra
Type: Wora
262.

What amount after a reduction of $16 . \overline{6} \%$ 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 texl
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: Wora
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
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 texl
Topic: Algebra
Type: Wora
268. How much is $\$ 10,000$ increased by $3 / 4 \%$ ? Calculate the answer accurate to the cent.
\$10,075.00
269. How much is $\$ 1045$ decreased by $0.5 \%$ ? Calculate the answer accurate to the cent.
\$1039.78

Difficulty: Easy
Jerome - Chapter 02 \#26S
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 texl
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 texi
Topic: Algebra Type: Wora
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.

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
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 \#27S
Learning Objective: 02-07 Solve problems involving percent change.
Source: Student text
Topic: Algebra
Type: Wora
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 texl
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
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
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: Wora
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 )
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
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 texl
Topic: Algebra
Type: Wora
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\%
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\%
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: Wora
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 $100-\mathrm{g}$ bar is $\$ 1.15$, what should be the price of an $80-\mathrm{g}$ bar?
$\$ 0.99$

Difficulty: Hara
Jerome - Chapter 02 \#297
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 O2 \#298
Learning Objective: 02-07 Solve problems involving percent change.
Source: Student text
Topic: Algebra
Type: Wora
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
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
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: Hara
Jerome - Chapter 02 \#30z
Learning Objective: 02-07 Solve problems involving percent change.
Source: Student text
Topic: Algebra
Type: Wora
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: Wora
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: Hara
Jerome - Chapter 02 \#305
Learning Objective: 02-07 Solve problems involving percent change.
Source: Student texi
Topic: Algebra
Type: Wora
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: Hara
Jerome - Chapter 02 \#306
Learning Objective: 02-07 Solve problems involving percent change.
Source: Student texl
Topic: Algebra
Type: Wora
307. Multiply and collect the like terms: $4(3 a+2 b)(2 b-a)-5 a(2 a-b)$
$-22 a^{2}+21 a b+16 b^{2}$

Difficulty: Easy
Jerome - Chapter 02 \#307
308. What amount is $17.5 \%$ more than $\$ 29.43$ ?
$\$ 34.58$

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 \#30s
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
310. What amount reduced by $15 \%$ equals $\$ 100$ ?
\$117.65

Difficulty: Easy
Jerome - Chapter 02 \#310
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
313. What amount when increased by $125 \%$ equals $\$ 787.50$ ?
$\$ 350.00$

## 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 texl
Topic: Algebra
Type: Wora
315.

Simplify and collect the like terms: $\frac{9 y-7}{3}-2.3(y-2)$
$0.7 y+2.2 \overline{6}$

Difficulty: Medium
Jerome - Chapter 02 \#315 Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.

Source: Student texi
Topic: Algebra
Type: Wora
316.

$$
P\left(1+0.095 \cdot \frac{135}{365} \left\lvert\,+\frac{2 P}{\left(1+0.095 \frac{75}{365}\right)}\right.\right.
$$

Simplify and collect the like terms:
$2.996843 P$

Difficulty: Medium
Jerome - Chapter 02 \#316
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texi
Topic: Algebra
Type: Wora
317. Simplify and combine the like terms: $6(4 y-3)(2-3 y)-3(5-y)(1+4 y)$
$-60 y^{2}+45 y-51$

Difficulty: Easy
Jerome - Chapter 02 \#317
318.

Simplify and combine the like terms: $\frac{5 b-4}{4}-\frac{25-b}{1.25}+\frac{7}{8} h$
$2.925 b-21$

## $3.05587 x$

Difficulty: Medium
Jerome - Chapter 02 \#31S
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texl
Topic: Algebra
Type: Wora
320.

Simplify and combine the like terms: $\frac{96 m m^{2}-72 m^{2} m^{2}}{48 m^{2} m}$

## $2 \frac{m}{n}-1.5 m$

Difficulty: Easy
Jerome - Chapter 02 \#320
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student texi
Topic: Algebra
Type: Wora
321.

Evaluate accurate to the cent: $\quad P(1+i)^{2}+\frac{S}{1+i t}$ for $P=\$ 2500, i=0.1025, n=2, S=\$ 1500, r=$ 0.09, and $\quad t=\frac{93}{365}$
$\$ 4505.14$

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: ${ }^{L\left(1-d_{1}!1-d_{2} \mid 1-d_{3}\right)}$ for $L=$
$\$ 340, d_{1}=0.15 . d_{2}=0.08, d_{3}-0.05$
\$252.59
323.

Evaluate accurate to the cent: ${ }^{\frac{R}{i}}\left[1-\frac{1}{|1+i|^{\prime \prime}}\right]$ 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 texl
Topic: Algebra
Type: Wora
324.

$-\frac{9}{x}$

Difficulty: Medium
Jerome - Chapter 02 \#324

Source: Student text
Topic: Algebra
Type: Wora
325.

## Simplify:

$-\frac{8 b^{3}}{a^{9}}$

Difficulty: Medium
Jerome - Chapter O2 \#325
Learning Objective: 02-01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Source: Student text
Topic: Algebra
Type: Wora
326.

Simplify: $\left|-\frac{2 x^{2}}{3}\right|^{-2}\left(\frac{5^{2}}{6 x^{3}}\left|-\frac{15}{x^{5}}\right|^{-1}\right.$
$-\frac{5}{8 x^{2}}$

Difficulty: Medium
Jerome - Chapter 02 \#326

Source: Student texi
Topic: Algebra
327.

Evaluate to six-figure accuracy:
$(1.0075)^{24}$
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
328.

Evaluate to six-figure accuracy: $\quad 1.05 \mathrm{~F}^{1 / 6}-1$
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.

Evaluate to six-figure accuracy: $\frac{(1+0.0075)^{36}-1}{0.0075}$
41.1527
330.

## $1-(1+0.045)^{-12}$ 0.045

### 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
331.
Evaluate to six-figure accuracy:
$(1.00 \overline{6})^{40}-1$
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
332.

Evaluate to six-figure accuracy: $(1+0.025)^{1 / 3}-1$
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
333.

Solve for $x$ to five-figure accuracy: $\frac{2 x}{1+0.13} \frac{92}{365}+x\left\{t+0.13 \cdot \frac{59}{365}\right)=\$ 831$
\$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: Wora
334.

Solve for $x$ to five-figure accuracy:

$$
3\left(1.03^{5}\right)+\frac{x}{1.03^{3}}+x=\frac{\$ 2500}{1.03^{2}}
$$

$\$ 436.96$
335.

Solve for x to five-figure accuracy: $\frac{1.08^{3}}{}+\frac{x}{2}(1.08)^{4}=\$ 850$
$\$ 576.63$

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:

$$
2.41+0.085 \cdot \frac{77}{365} \left\lvert\,+\frac{x}{\left(1+0.085 \cdot \frac{132}{365}\right)}=\$ 1565.70\right.
$$

$\$ 520.85$
337. Use formula (4-2), $N=L\left(1-d_{1}\right)\left(1-d_{2}\right)\left(1-d_{3}\right)$, 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 texl
Topic: Algebra
Type: Wora
338. Use the formula $V f=V i\left(1+c_{1}\right)\left(1+c_{2}\right)\left(1+c_{3}\right)$ to determine $c_{2}$ if $V f=\$ 586.64, V i=\$ 500, c_{1}=$ 0.17 , and $c_{3}=0.09$.
-8.00\%

Difficulty: Easy
Jerome - Chapter 02 \#338
339. What percent of $\$ 6.39$ is $\$ 16.39$ ?
256.5\%

Difficulty: Easy
Jerome - Chapter 02 \#33S
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 texi
Topic: Algebra
Type: Wora
341. $\frac{3}{4} \%$ of what amount is $\$ 1.00$ ?
\$133.33

Difficulty: Easy
Jerome - Chapter 02 \#341

## 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: Wora
343. Solve the following equations.
$3 x+5 y=11$
$2 x-y=16$
(7, -2)

Difficulty: Medium
Jerome - Chapter 02 \#343
344. Solve each of the following pairs of equations to three-figure accuracy.

$$
\begin{array}{ll}
\text { a) } \quad 4 a-5 b=30 \\
& 2 a-6 b=22 \\
\text { b) } \quad 76 x-29 y=1050 \\
& -213 x-63 y=250
\end{array}
$$

a) $(5.00,-2.00)$; b) (11.4, -6.32)

Difficulty: Medium
Jerome - Chapter 02 \#344
345. Rearrange the formula $F V=P V\left(1+i_{1}\right)\left(1+i_{2}\right)$ to isolate $i_{1}$.

$$
i_{1}=\frac{F V}{P V\left(1+i_{2}\right)}-1
$$

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?
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) $\$ 7.48$
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 texi

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 \#34S
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 $\mathrm{Ken}=\$ 52,080$

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
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: Hara
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: Wora
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: Hara
Jerome - Chapter 02 \#353
354. Rory invested a total of $\$ 7800$ in shares of $A B C$ Ltd. and $X Y Z$ Inc. One year later the investment was worth $\$ 9310$, after the shares of $A B C$ had increased in value by $15 \%$ and the shares of $X Y Z$ 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 texi
Topic: Algebra
Type: Wora
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 texl
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 texl
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 \#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: Test bank
Topic: Algebra
Type: Wora
358.

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

## $81 a^{12} b^{*}$ <br> $\overline{(a-b)^{4}}$

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: Wora
359.

Simplify: $\left\langle\left.\frac{3}{2 x^{2}}\right|^{2}\right| \frac{6 x^{3}}{5^{2}}\left|-\frac{x}{5}\right|^{-1}$
$-\frac{27}{10 x^{2}}$
360.

## Simplify:

$$
-\frac{y}{2 x^{4}}
$$

Simplify:

$\frac{x}{4}$

Source: Test bank
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: Wora
363. Simplify: $2 a-1-a)+4 a-5 a$

## $2 a$

Difficulty: Easy
Jerome - Chapter 02 \#363
364.

Simplify: $-4 x-[-3 x+2(x-6)]$
$-3 x+12$

Difficulty: Easy
Jerome - Chapter 02 \#364
365.


## $\$ 3154.06$

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: Wora
366.

Simplify: $\frac{\left(2 x^{4}, y^{2}=4, y^{2}\right.}{4 x y^{2}}$
$x^{-2} y^{2}=1$

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
368.
Simplify: $\frac{1-11+00151^{18}}{0015}$
15.67

Difficulty: Medium

Source: Test bank
Topic: Algebra
Type: Wora
369.

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

$$
x=3
$$

Difficulty: Easy
Jerome - Chapter 02 \#365
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Test bank
Topic: Algebra
Type: Wora
370. Solve for the unknown variable: $9 x+10=\cdots 3 x+3+$
$x=2$

Difficulty: Easy
Jerome - Chapter 02 \#370
371. Solve for the unknown variable: $15 a+3+a-61=a+15$
$a=1.6$

\$1153.32
373.

$$
3 x+7 y=-8
$$

Solve for the unknown variable: $5 x-2 \boldsymbol{2}=19$

$$
x=3 ; y=-2
$$

Difficulty: Easy
Jerome - Chapter 02 \#373

Source: Test bank
Topic: Algebra
Type: Wora

Solve for the unknown variable: $-67 x+07 y=0.37$

$$
x=0.4 ; y=0.7
$$

Difficulty: Medium
Jerome - Chapter 02 \#374
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Test bank
Topic: Algebra
375.
In

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

$$
x=0 ; y=0
$$

Difficulty: Hara
Jerome - Chapter 02 \#375
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: Wora
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 $11 / 2$ 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: Wora
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: Wora
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: Wora
381. How much is $\$ 10$ after an increase of $900 \%$ ?
$\$ 100.00$

Difficulty: Easy
Jerome - Chapter 02 \#381
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

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: Wora
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: Hara
Jerome - Chapter 02 \#387
Learning Objective: 02-07 Solve problems involving percent change.
Source: Test bank
Topic: Algebra
Type: Wora
388. If December sales were $30 \%$ more than November sales, by what percent are November sales less than December sales?
23.1\%

Difficulty: Hara
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: Hara
Jerome - Chapter 02 \#385
Learning Objective: 02-07 Solve problems involving percent change.
Source: Test bank
Topic: Algebra
Type: Wora
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: $-a+(2 b-c)-(a-b+c)$
A. $-2 a+3 b-2 c$
B. $-2 a+b-2 c$
C. $3 b-2 c$
D. $-2 a+3 b$
E. $-2 a+2 b-2 c$

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: $1-(3 x-x y+y)-(-x+y-5 x y)$
A. $1-2 x-2 y-6 x y$
B. $1-2 x-2 y+6 x y$
C. $1-4 x-2 y+6 x y$
D. $1-2 x-2 y+4 x y$
E. $1-4 x-2 y-6 x y$
393. Simplify and collect like terms: $3(x-2 y)(2 x+y)$
A. $6 x^{2}-6 x y-6 y^{2}$
B. $6 x^{2}+10 x y-6 y^{2}$
C. $6 x^{2}-9 x y-6 y^{2}$
D. $6 x^{2}-9 x y+6 y^{2}$
E. $6 x^{2}+10 x y+6 y^{2}$

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: $9 x-[4 y-3(x-y)]$
A. $12 x+7 y$
B. $6 x-7 y$
C. $6 x+7 y$
D. $12 x-7 y$
E. $9 x-7 y$
395. Simplify and collect like terms:
$\frac{4 x+5}{8}-2.1(x-7)$
8
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. $-1.6 x+15.325$

Difficulty: Easy
Jerome - Chapter 02 \#395

Source: Test bank
Topic: Algebra
Type: MC
396.
A. $-617 x^{2}-4 x+115$
B. $97 x^{2}-4 x+115$
C. $-0.7 x^{2}-.4 x+35$
D. $07 x^{2}-4 x+35$
E. $-97 x^{2}+8 x+115$

Difficulty: Medium
Jerome - Chapter 02 \#396

Simplify and collect like terms:

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

A. $3.076 F$
B. $3.018 F$
C. $2.787 F$
D. $3.532 F$
E. 2.956 F
398.

Simplify and collect like terms:

$$
x\left(1+0.045 \times \frac{55}{365}\right)+\frac{2.5}{\left(1-0.045 \times \frac{200}{365}\right)}
$$

A. $2.957 x$
B. $2.208 x$
C. $3.057 x$
D. $2.068 x$
E. $1.983 x$
399.
Simplify and collect like terms: $\frac{\frac{12 x y}{}-6 y^{2}}{3 y}$
A. $4 x+2 y$
B. $4 x-2 y$
C. $4 x y+2 y^{2}$
D. $4 x-2 y$
E. $4 \times 2 \cdot-2:$

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
400.

$$
\frac{10 x y^{3}-15 x^{4} y^{2}+25 x y^{4}}{5 x}
$$

A. $2 y^{2}-3 x^{2} y+5 y^{4}$
B. $2 x-3 x^{2} y+5 y^{2}$
C. $2 y-3 x^{2} y+5$
D. $2 y^{\prime}-3 x^{2}+5$
E. $2 y-3 x^{2} y+5 y^{3}$

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: $3 x+4 y-6 x y$, for $x=2, y=-3$
A. 30
B. -42
C. 54
D. -18
E. 24
402.

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

A. \$39.87
B. $\$ 1614.87$
C. $\$ 1973.71$
D. $\$ 16,128$
E. $\$ 724.96$
403. Simplify the following: $u^{u^{2}} a^{b}$
A. $a^{8}$
B. $a^{7}$
C. $a^{9}$
D. $d^{d^{2}}$
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: ${ }^{1 u^{2} M u^{-4} M u^{3} \mid}$
A. $a^{\prime \prime}$
B. ${ }^{a}$
C. $a^{-96}$
D. $a^{-1}$
E. $u^{-s}$

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
405. Simplify the following: $b^{t} \div h^{2}$
A. $b^{+}$
B. $b^{10}$
C. $b^{10}$
D. $b^{-6}$
E. $b^{6}$

Difficulty: Easy
Jerome - Chapter 02 \#405
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
406.

Simplify the following: $y^{y^{3}+r^{-5}}$
A. $y^{13}$
B. $y^{3}$
C. $9^{-40}$
D. $9^{49}$
E. $3^{-12}$

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: $\left(x^{5}\right)^{4}$
A. $x^{9}$
B. $x^{20}$
C. ${ }^{x}$
D. $x^{-1}$
E. $x^{0}$

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
Topic: Algebra
Type: MC
408. Simplify the following: ${ }^{\left(2 x^{3}\right)^{3}}$
A. $10 \mathrm{n}^{18}$
B. $32 x^{8}$
C. $32 x^{15}$
D. $2 n^{n}$
E. $2 x^{8}$

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: $\frac{\frac{1 x^{2} n x k x^{-3} \mid}{x^{-4}}}{x}$
A. $x^{-1}$
B. $x^{6}$
C. $x^{-2}$
D. $x$
E. $x^{2}$

Difficulty: Easy
Jerome - Chapter 02 \#40S
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
410.

Simplify the following: $\frac{\left(a^{3}\right)^{-2}}{u^{b}}$
A. $a^{0}$
B. ${ }^{a}$
C. $a^{-11}$
D. $a^{-5}$
E. $a^{-12}$

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: $\frac{\frac{2 a^{3} b^{2} b^{4}}{a^{2} b^{3}}}{}$
A. $16 a^{10} b^{4}$
B. $2 a^{10} b^{5}$
C. $16 a^{4} b^{4}$
D. $2 a^{3} b^{3}$
E. $16 a^{2} b^{3}$

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.

Simplify the following: $\left.\backslash \frac{4 x}{2 x^{3}}\right|^{2}\left|\frac{3 y^{2}}{2 y^{3}}\right|^{2}\left|\frac{3 x y}{5}\right|^{-1}$
A. $\frac{5 x^{2}}{16 y^{3}}$
B. $\frac{15 x^{3}}{16 y^{3}}$
C. $\frac{5 x^{3}}{8 y^{2}}$
D. $\frac{15 x^{3}}{4 y^{3}}$
E. $\frac{5 x^{2}}{8 y^{2}}$

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
C. 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: $-16^{5 / 4}$
A. 32
B. 64
C. -64
D. -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.

```
46
```

A. 14,857.17
B. 487.56
C. 3714.29
D. 60.945
E. 11.04
416.

Evaluate the following: $\frac{104^{10}-1}{004}$
A. 12.006
B. 698.137
C. 1.201
D. 36.006
E. 35.58

Difficulty: Easy
Jerome - Chapter 02 \#415
Learning Objective: 02-02 Solve a linear equation in one variable.

Topic: Algebra
Type: MC

Evaluate the following.

> Source: Test bank

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.

Evaluate the following: $\frac{1.655^{6}-1}{0055}$
A. 233.95
B. 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
Type: MC
418.

Evaluate the following: $\frac{1-1075^{-8}}{19075}$
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. Evaluate the following: $\frac{1-1056^{-15}}{0056}$
A. -9.971
B. -22.579
C. 58.29
D. 9.971
E. 25.743

Difficulty: Medium
Jerome - Chapter 02 \#41S
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
420.

## Evaluate the following:

$$
\left|\frac{4}{3}\right|^{:}\left|\frac{3}{4}\right|^{-3}\left|\frac{4}{3}\right|^{-4}
$$

A. $\frac{4}{3}$
B. $\frac{3}{4}$
C. $\frac{16}{3}$
D. $\frac{4}{9}$

## E. 1

Difficulty: Hara
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?
A. $\$ 115$
B. $\$ 70.84$
C. $\$ 64.40$
D. $\$ 96.60$
E. \$100.63
422. The retail price of a packaged $C D$ 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. $\$ 455,000$

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. $\$ 14,000 ; \$ 6000$
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; $\$ 25,000$

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
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

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. $11.7 \%$
E. $14.3 \%$

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. $19.2 \%$
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\%

Source: Test bank
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
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. $63.7 \%$
C. $36.3 \%$
D. $42 \%$
E. 45\%
439. Simplify: $8-(2 x+4 y-3)-(4 y+10)$
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 $(5 x-2 y)(x-2 y)=$
A. $5 x^{2}-12 x y-4 y^{2}$
B. $5 x^{2}+8 x y-4 y^{2}$
C. $5 x^{2}-12 x y+4 y^{2}$
D. $5 x^{2}-8 x y+4 y^{2}$
E. $5 x^{2}+12 x y+4 y^{2}$
441. Solve the following equation $2(b-2)-(b-2)=$
A. $b+6$
B. $3 b-2$
C. $3 b+2$
D. $b-2$
E. $b-6$

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: $-4(r-t)-(2 r-4 t)$ for $r=1 / 2$ and $t=1 / 4$.
A. 1
B. 5
C. 3
D. -5
E. -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
Type: MC
443.

Solve the following equation $\frac{6 a+9}{3}-4(a-1)=$
A. $-2 a+13$
B. $-2 a-1$
C. $-2 a+7$
D. $2 a+7$
E. 2a-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
Type: MC
444. Evaluate: $L\left(1-d_{1}\right)\left(1-d_{2}\right)$ 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. $\$ 600.00$
445. Solve the following equation $2.48832^{1 / 5}=$
A. 95.396217
B. 0.0104826
C. 1.2
D. 3.0
E. 0.8333333

Difficulty: Easy
Jerome - Chapter 02 \#445

Source: Test bank
Topic: Algebra
Type: MC
446.

Solve the following equation $\binom{r^{3} t^{4}}{t}^{3}=$
A. $r^{9} t^{4}$
B. 16
C. $r^{6} t^{\prime}$
D. $r^{9} t^{11}$
E. $\rho^{\rho} \rho$

Difficulty: Medium
Jerome - Chapter 02 \#446

Source: Test bank
Topic: Algebra
Type: MC

A. ${ }^{5}$
B. $r^{17 / 12}$
C. $r^{12}$
D. $r^{2}$
E. $\beta^{36}$

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 $\left(8^{2}\right)\left(2^{-4}\right)(-2)^{2}=$
A. 1024
B. 256
C. 4
D. 48
E. 16
449.

$$
\text { Solve for } \mathrm{x}: 2 x+\frac{1}{8}^{\mathrm{x}}=x+10
$$

A. $3 \frac{1}{5}$
B. $8 \frac{8}{9}$
C. $-3 \frac{1}{5}$
D. $4 \frac{12}{17}$
E. $\frac{9}{80}$

Difficulty: Medium
Jerome - Chapter 02 \#44S
Learning Objective: 02-03 Solve two linear equations in two variables.
Source: Test bank
Topic: Algebra
Type: MC
450. Solve for $x \cdot 2 / 3(x+3)=-1 / 2(6 x+20)+15$
A. $2 \frac{5}{6}$
B. $\frac{9}{11}$
C. 1.5
D. $-2 \frac{13}{22}$
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.

Solve for $x .^{-\left(\frac{1}{2} x-5\right)}=2 x-10$
A. 6
B. -6
C. -10
D. $3 \frac{1}{3}$
E. 10
452.

Solve for $x \cdot \frac{\mathrm{x}}{1.5^{2}}+3 \times(1.5)^{2}=100$
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 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

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?
A. $\$ 50,000$
B. $\$ 52,920$
C. $\$ 25,920$
D. $\$ 10,080$
E. \$46,080
458. What number is $25 \%$ less than 96 ?
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

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.
$87 \frac{1}{2}{ }^{\circ}$ 。
What number is less than 250 ?
A. 218.75
B. 468.75
C. 133.33
D. 383.33
E. 31.25

Difficulty: Easy
Jerome - Chapter 02 \#461
462. After adding $2 \frac{1}{4} 0_{0}$ 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. $\$ 44,705.88$
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. $\$ 357.43$

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. $25 \%$
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. $\$ 170.00$

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
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. $\$ 2,100$

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. $\$ 18.27$
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

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
474. What percent of 36 is 90 ?
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. $\$ 450.00$
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
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. $\$ 1,625,000$
479. Solve for $x$ and $y$.
$x+y=40$
$-x+y=-20$
A. $x=30 ; y=10$
B. $x=-10 ; y=30$
C. $x=-30 ; y=-10$
D. $x=-60 ; y=20$
E. $x=-60 ; y=-20$

## 480. Solve for $x$ and $y$.

$2 x+3 y=7$
$3 x-y=5$
A. $x=6 ; y=2$
B. $x=-2 ; y=1$
C. $x=-2 ; y=-1$
D. $x=2 ; y=1$
E. $x=2 ; y=-1$
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:
$y=-0.2 x+4.2$
$x-0.5 y=10$
A. $x=11 ; y=2$
B. $x=2 ; y=11$
C. $x=11 ; y=6.4$
D. $x=6.45 ; y=2.9$
E. $x=6.4 ; y=11$

## c2 Summary

## Category

Accessibility: Keyboard Navigation ..... 58
Difficulty: Easy ..... 274
Difficulty: Hard ..... 49
Difficulty: Medium ..... 159
Jerome - Chapter 02 ..... 482
Learning Objective: 02- ..... 112
01 Simplify algebraic expressions by extracting common factors and applying rules of exponents.
Learning Objective: 02-02 Solve a linear equation in one variable. ..... 70
Learning Objective: 02-03 Solve two linear equations in two variables. ..... 48
Learning Objective: 02-04 Rearrange a formula or equation to isolate a particular variable. ..... 34
Learning Objective: 02- ..... 75
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.
Learning Objective: 02-07 Solve problems involving percent change. ..... 90
Source: Student text ..... 356
Source: Test bank ..... 126
Topic: Algebra ..... 482
Type: Concept ..... 4
Type: MC ..... 91
Type: Word ..... 387

