

Exam

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Change the numbers to their percent equivalents.

1) 0.56 1) _____

- A) 0.056% B) 56% C) 560% D) 5.6%

2) 0.8 2) _____

- A) 0.8% B) 800% C) 0.08% D) 80%

3) 0.176 3) _____

- A) 0.176% B) 17.6% C) 176% D) 0.0176%

4) 0.939 4) _____

- A) 0.0939% B) 939% C) 93.9% D) 0.939%

5) 4.9 5) _____

- A) 0.49% B) 49% C) 490% D) 0.0049%

6) 0.00217 6) _____

- A) 0.000217% B) 0.217% C) 0.0217% D) 0.1085%

7) 3 7) _____

- A) 150% B) 0.3% C) 300% D) 0.03%

8) 0.00043 8) _____

- A) 0.000043% B) 0.0043% C) 0.043% D) 0.43%

9) 0.017 9) _____

- A) 0.0017% B) 0.17% C) 1.7% D) 17%

10) 0.1258 10) _____

- A) 1.258% B) 125.8% C) 0.01258% D) 12.58%

Change the numbers to their percent equivalents. Round to the nearest tenth of a percent.

11) $\frac{95}{100}$ 11) _____

- A) 0.95% B) 9.5% C) 950% D) 95%

12) $\frac{7}{10}$ 12) _____

- A) 0.7% B) 70% C) 7% D) 700%

13) $\frac{1}{8}$ 13) _____

- A) 1.3% B) 15.6% C) 80% D) 12.5%

14) $\frac{2}{3}$ 14) _____

- A) 120% B) 66.7% C) 6.7% D) 55.6%

15) $\frac{81}{100}$ 15) _____

- A) 81% B) 8.1% C) 1,000% D) 40.5%

16) $\frac{1}{5}$ 16) _____

- A) 150% B) 13.3% C) 20% D) 2%

17) $\frac{11}{2}$ 17) _____

- A) 1,375% B) 40% C) 55% D) 550%

18) $\frac{4}{9}$ 18) _____

- A) 44.4% B) 4.4% C) 444.4% D) 55.5%

Express the fraction or mixed number as a percent.

19) $1\frac{1}{7}$ 19) _____

- A) $28\frac{4}{7}\%$ B) $11\frac{3}{7}\%$ C) $114\frac{2}{7}\%$ D) $1\frac{1}{7}\%$

20) $4\frac{1}{10}$ 20) _____

- A) 4.1% B) 41% C) 0.41% D) 410%

Solve the problems.

21) In a particular city, $\frac{7}{25}$ of the residents subscribe to the local newspaper. Write this fraction as a percent. 21)

- A) 2.8% B) 0.028% C) 0.28% D) 28%

Provide an appropriate response.

22) $\frac{4}{7} = ?$ (percent) 22) _____

A) $0.57\frac{1}{7}\%$

B) 1.75%

C) $5.7\frac{1}{7}\%$

D) $57\frac{1}{7}\%$

E) none of the above

23) $2\frac{5}{6} = ?$ (percent) 23) _____

A) 3.203%

B) $2.83\frac{1}{3}\%$

C) $283\frac{1}{3}\%$

D) 320.3%

E) none of the above

24) 0.000238 = ? (percent) 24) _____

A) 0.238%

B) 2.38%

C) 0.00238%

D) 0.0238%

E) none of the above

25) 0.0789 = ? (percent) 25) _____

A) 0.789%

B) 78.9%

C) 0.00789%

D) 7.89%

E) none of the above

26) $2\frac{7}{9} = ?$ (percent) 26) _____

A) $3.28\frac{4}{7}\%$

B) $2.77\frac{7}{9}\%$

C) $277\frac{7}{9}\%$

D) $328\frac{4}{9}\%$

E) none of the above

27) Change $\frac{2}{7}$ to a percent equivalent to the nearest thousandth. 27) _____

- A) 0.003% B) 3.5% C) 28.571% D) 0.286%

28) $\frac{7}{8}$ = ? (percent) 28) _____

- A) 0.875%
B) 87.5%
C) $11.4\frac{2}{7}$ %
D) 8.75%
E) none of the above

29) $\frac{7}{9}$ = ? (percent) 29) _____

- A) $7.77\frac{7}{9}$ %
B) $1.28\frac{4}{7}$ %
C) $77\frac{7}{9}$ %
D) $0.77\frac{7}{9}$ %
E) none of the above

30) 4.721 = ? (percent) 30) _____

- A) 47.21%
B) 472.1%
C) 0.04721%
D) 0.4721%
E) none of the above

31) $2\frac{4}{7}$ = ? (percent) 31) _____

- A) 37.5%
B) $257\frac{1}{7}$ %
C) $2.57\frac{1}{7}$ %
D) $25.7\frac{1}{7}$ %
E) none of the above

32) $\frac{5}{6} = ?$ (percent) 32) _____

A) $0.83\frac{1}{3}\%$

B) 12%

C) 1.20%

D) $83\frac{1}{3}\%$

E) none of the above

33) $\frac{2}{3} = ?$ (percent) 33) _____

A) $66\frac{2}{3}\%$

B) $0.066\frac{2}{3}\%$

C) $0.66\frac{2}{3}\%$

D) 0.66%

E) none of the above

34) 0.00435 = ? (percent) 34) _____

A) 0.435%

B) 0.0435%

C) 43.5%

D) 4.35%

E) none of the above

35) If $\frac{2}{5}$ of the telephone workers in a city are female, what percent are female? 35) _____

A) 50% B) 60% C) 30% D) 40%

36) Change $\frac{5}{8}$ to a percent equivalent. 36) _____

A) 0.625% B) 78% C) 1.6% D) 62.5%

37) Change $\frac{11}{12}$ to a percent equivalent. 37) _____

A) 83.3% B) 95.8% C) 91.7% D) 75%

38) Change $\frac{1}{9}$ to a percent equivalent. 38) _____

A) 25% B) 15% C) 20% D) 11.1%

- 39) If $\frac{4}{5}$ of all plumbers in the city belong to the plumber's union, what percent belong to the union? 39) _____
- A) 80% B) 60% C) 40% D) 20%

Write the percent as a decimal.

- 40) 2% 40) _____
 A) 0.2 B) 0.002 C) 0.02 D) 2

- 41) 70% 41) _____
 A) 0.7 B) 0.07 C) 7 D) 0.59

- 42) 85% 42) _____
 A) 0.85 B) 0.085 C) 8.5 D) 0.74

- 43) 800% 43) _____
 A) 8 B) 8.01 C) 0.8 D) 80

- 44) 170% 44) _____
 A) 1.71 B) 0.17 C) 1.7 D) 17

- 45) 0.1% 45) _____
 A) 0.001 B) 10 C) 0.0001 D) 0.01

- 46) $47\frac{3}{4}$ % 46) _____

- A) 0.0545 B) 0.4725 C) 0.4775 D) 4.7075

Solve the problems.

- 47) Video games made up 47.8% of the total revenue for a small specialty store. Write this percent as a decimal. 47)

- A) 47.8 B) 0.478 C) 4.78 D) 0.0478

- 48) 38% of students at a small college lived at home while attending classes. Write this percent as a decimal. 48)

- A) 0.38 B) 38.0 C) 0.038 D) 3.8

- 49) In a surveyed area, 96.7% of the residents signed up for the local park district pool pass. Write this percent as a decimal. 49) _____

- A) 0.967 B) 0.0967 C) 9.67 D) 96.7

- 50) Approximately 23.3% of all students at a city college commute to school. Write this percent as a fraction or mixed number in simplest form. 50) _____

- A) $\frac{233}{1000}$ B) $23\frac{3}{10}$ C) $2\frac{33}{100}$ D) $\frac{233}{10,000}$

Provide an appropriate response.

51) 72% = ? (fraction) 51) _____

A) $\frac{4}{5}$

B) $\frac{1}{2}$

C) $\frac{9}{10}$

D) $\frac{18}{25}$

E) none of the above

52) 38% = ? (fraction) 52) _____

A) $\frac{19}{50}$

B) $\frac{9}{10}$

C) $\frac{17}{20}$

D) $\frac{7}{10}$

E) none of the above

53) $10\frac{1}{5}\%$ = ? (decimal) 53) _____

A) 102

B) 10.2

C) 0.102

D) 1.02

E) none of the above

54) $66\frac{2}{3}\%$ = ? (decimal) 54) _____

A) $0.066\frac{2}{3}$

B) $66.0\frac{2}{3}$

C) $6.6\frac{2}{3}$

D) $0.66\frac{2}{3}$

E) none of the above

55) Change 12.5% to its numerical equivalent: 55) _____

A) 0.0125

B) 0.00125

C) 0.125

D) 0.15

56) $84\% = ?$ (fraction) 56) _____

A) $\frac{21}{25}$

B) $\frac{3}{5}$

C) $\frac{7}{10}$

D) $\frac{1}{2}$

E) none of the above

57) $18\frac{2}{5}\% = ?$ (decimal) 57) _____

A) 184

B) 18.4

C) 1.84

D) 0.184

E) none of the above

58) $55\% = ?$ (fraction) 58) _____

A) $\frac{3}{5}$

B) $\frac{11}{25}$

C) $\frac{11}{20}$

D) $\frac{7}{10}$

E) none of the above

59) $48\% = ?$ (fraction) 59) _____

A) $\frac{4}{15}$

B) $\frac{6}{10}$

C) $\frac{4}{5}$

D) $\frac{12}{25}$

E) none of the above

60) $11\frac{3}{5}\% = ?$ (decimal) 60) _____

A) 11.6

B) 1.16

- C) 0.116
 D) 0.0116
 E) none of the above

61) Change 41.7% to its numerical equivalent. 61) _____
 A) 0.147 B) 0.417 C) 0.0417 D) 0.714

62) $33\frac{1}{3}\%$ = ? (fraction) 62) _____

- A) $3\frac{1}{3}$
 B) $\frac{1}{3}$
 C) $\frac{4}{2}$
 D) $33\frac{1}{3}$
 E) none of the above

63) Change 16% to both fractional and decimal equivalents. 63) _____

- A) $\frac{4}{25}$; 0.16 B) $\frac{8}{5}$; 1.6 C) $\frac{2}{125}$; 0.016 D) $\frac{1}{4}$; 0.16

64) Change 300% to an equivalent whole number. 64) _____

- A) 3 B) 300 C) 0 D) 30

65) Change $525\frac{1}{2}\%$ to a mixed number equivalent. 65) _____

- A) $5\frac{51}{200}$ B) $5\frac{51}{2000}$ C) $5\frac{51}{100}$ D) $52\frac{11}{20}$

66) Change $204\frac{3}{4}\%$ to a decimal equivalent. 66) _____

- A) $204\frac{3}{4}$ B) 0.20475 C) 20.475 D) 2.0475

Identify the unknown amount as the portion, rate, or base.

67) 10% of 80 is what number? 67) _____

- A) base B) rate C) portion

68) 50% of what number is 54? 68) _____

- A) rate B) base C) portion

69) What percent of 90 is 2? 69) _____

- A) portion B) rate C) base

70) 2 is 30% of what number? 70) _____

A) rate B) portion C) base

71) What number is 1.5% of 26? 71) _____

A) rate B) rate C) portion

72) 6.7 is what percent of 26? 72) _____

A) portion B) rate C) base

Provide an appropriate response.

73) Identify the portion in the following: 6 is 15% of 40. 73) _____

A) 15% B) 6 C) 100 D) 40

74) Identify the base in the following: 6 is 15% of 40. 74) _____

A) 6 B) 40 C) 15% D) 100

75) Identify the rate in the following: 6 is 15% of 40. 75) _____

A) 100 B) 40 C) 15% D) 6

76) What is the name associated with the missing element in the following problem?

What percent of 20 students is 16 females? 76) _____

A) base B) rate C) percent D) portion

77) What is the name associated with the missing element is the following problem?

35% of \$500 is what number? 77) _____

A) percent B) rate C) base D) portion

78) In the relationship of 11.25 is 25% of 45, what is the word associated with 25%? 78) _____

A) base B) rate C) portion D) discount

79) In the relationship of 49 is 35% of 140, which value is the portion? 79) _____

A) 35% B) 49 C) 140 D) 100%

80) In the relationship of 22% of 500 is 110, what is the word associated with 110? 80) _____

A) rate B) base C) portion D) percent

81) In the relationship of 330 is 165% of 200, which value is the rate? 81) _____

A) 100% B) 330 C) 165% D) 200

82) In the relationship of 50% of 0.8 is 0.4, what is the word associated with 0.8? 82) _____

A) percent B) base C) portion D) rate

Solve using the percentage formula.

83) What number is 75% of 600? 83) _____

A) 45 B) 4.5 C) 4,500 D) 450

84) 6% of 8800 is what number? 84) _____

A) 628 B) 5280 C) 6280 D) 528

85) What number is 145% of 4,760? 85) _____

A) 690,200 B) 69,020 C) 690 D) 6,902

86) What number is 88% of 330? 86) _____

A) 29.04 B) 2,904 C) 290.4 D) 29,040

87) What number is 8.2% of 42? Round to the nearest hundredth when necessary. 87) _____

A) 3.44 B) 344 C) 0.34 D) 34.4

88) 70 is 20% of what number? 88) _____

A) 14 B) 350 C) 35 D) 3,500

89) 21 is 3% of what number? 89) _____

A) 700 B) 70 C) 63 D) 7,000

90) 35% of what number is 84? 90) _____

A) 0.42 B) 240 C) 2,400 D) 42

91) 100% of what number is 19? 91) _____

A) 1 B) 19 C) 38 D) 100

92) 187 is 34% of what number? 92) _____

A) 0.18 B) 5,500 C) 550 D) 18

93) What percent of 2,800 is 56? 93) _____

A) 50% B) 51% C) 3% D) 2%

94) 260 is what percent of 52? 94) _____

A) 5% B) 500% C) $\frac{1}{5}$ % D) 50%

95) 40 is what percent of 32? 95) _____

A) 125% B) 130% C) 80% D) 1.25%

96) What percent of 40 is 32? 96) _____

A) 125% B) 75% C) 120% D) 80%

97) What percent of 50 is 13? 97) _____

A) 30% B) 26% C) 60% D) 13%

98) 140 of 280 is what percent? 98) _____

A) 200% B) 50% C) 100% D) 40%

99) What percent of 10 is $\frac{1}{2}$? 99) _____

A) 7% B) 5.5% C) 10% D) 5%

100) 3.1 is what percent of 4? 100) _____

A) 82.5% B) 77.5% C) 78.5% D) 75.5%

101) 574 is 11.2% of what number? 101) _____

A) 51,250 B) 5,125 C) 13 D) 0.13

102) 54 is 135% of what number? 102) _____
A) 40 B) 182.25 C) 400 D) 18,225

103) $2\frac{1}{2}$ % of what number is 62? 103) _____
A) 248 B) 24,800 C) 2,480 D) 1.55

104) $66\frac{2}{3}$ % of what number is 774? 104) _____
A) 11,610 B) 1,161 C) 116.1 D) 516

105) 95% of what number is 28.5? 105) _____
A) 30 B) 19 C) 333 D) 95

106) What number is 120% of 3,590? 106) _____
A) 43,080 B) 430,800 C) 4,308 D) 431

107) What number is 3% of 386? 107) _____
A) 11.58 B) 115.8 C) 7.72 D) 15.44

108) 39.5% of 2,400 is what number? 108) _____
A) 948 B) 1,200 C) 1,472 D) 1,452

109) What number is $3\frac{1}{5}$ % of 79? Round to the nearest hundredth when necessary. 109) _____
A) 253 B) 25.3 C) 0.03 D) 2.53

Solve the problems.

110) A mutual fund invests \$96,000 in municipal bonds and earns 5% per year on the investment. How much money is earned per year? 110) _____

A) \$1,920,000 B) \$4,800 C) \$48,000 D) \$192,000

111) A chemical solution contains 1% salt. How much salt is in 4 mL of solution? 111) _____
A) 400 mL B) 40 mL C) 0.4 mL D) 0.04 mL

112) A discount store had monthly sales of \$103,400 and spent 22% of it on advertising. How much was spent on advertising? 112) _____

A) \$47,000 B) \$470,000 C) \$227,480 D) \$22,748

113) The First Nations Bank pays $3\frac{4}{5}$ % interest per year on growth fund accounts. What is the annual income on a growth fund account of ~~\$59,000~~? Round to the nearest dollar. 113) _____

A) \$1,966,667 B) \$196,667 C) \$2,242 D) \$22,420

114) A analyst has 90 clients, 50% of whom are businesses. Find the number of business clients. 114) _____

- A) 45 clients B) 4,500 clients C) 450 clients D) 45,000 clients

115) The appliance store where the Scott family shops offers a 9% discount for paying cash. The Scott family received a discount of \$86. What was their total bill before the discount? 115) _____

- A) \$956 B) \$10 C) \$8 D) \$800

116) Don sells real estate and receives a commission of \$870. If his commission rate is 5% of the seller's net, what was the seller's net? 116) _____

- A) \$17,400 B) \$8,700 C) \$87,000 D) \$20,880

117) Michelle earns 10% of the net profit in commission on advertising sales for a magazine. If she receives \$860.20 as a commission, what was the net profit on her sales? 117) _____

- A) \$43,010.00 B) \$21,505.00 C) \$8,602.00 D) \$4,301.00

118) A hockey team in one game scored on 20% of the total number of shots on its opponent's goalie. If the team scored a total of 5 goals, then how many shots did they direct at the opponent's goalie? 118) _____

- A) 37.5 B) 12.5 C) 50 D) 25

119) In one game, a baseball pitcher throws 80% of his pitches for strikes. If the pitcher throws 32 strikes in the game, then how many pitches did he throw? 119) _____

- A) 20 B) 32 C) 40 D) 80

120) Alex and Juana went on a 120-mile canoe trip with their class. On the first day they traveled 24 miles. What percent of the total distance did they canoe? 120) _____

- A) 0.2% B) 500% C) 20% D) 5%

121) Students at Maple School earned \$528 selling candles. They want to accumulate \$2,000 for a club trip. What percent of their goal has been reached? 121) _____

- A) 40% B) 26.4% C) 0.264% D) 4%

122) Alex has saved \$476 at the bank. He wants to accumulate \$1,750 for a trip to soccer camp. What percent of his goal has been reached? 122) _____

- A) 4% B) 27.2% C) 0.272% D) 40%

Provide an appropriate response.

123) What is the base if the portion is 42 and the rate is 12%? Use the percentage formula. 123) _____

- A) 5.04 B) 3.5 C) 350 D) 504

124) What percent of 893.6 is 23.7? (nearest whole percent) Use the percentage formula. 124) _____

- A) 3%
B) 2%
C) 27%
D) 37%

E) none of the above

125) 21% of 526 is what number? (nearest whole number) Use the percentage formula. 125) _____

- A) 399
- B) 110
- C) 2,505
- D) 25

E) none of the above

126) 61.7% of what number is 407.38? (nearest whole number) Use the percentage formula. 126) _____

- A) 1,515
- B) 251
- C) 152
- D) 660

E) none of the above

127) What percent of 289.7 is 83.65? (nearest whole percent) Use the percentage formula. 127) _____

- A) 346%
- B) 29%
- C) 24%
- D) 35%

E) none of the above

128) 47.9% of what number is 423.39? (nearest whole number) Use the percentage formula. 128) _____

- A) 884
- B) 2,028
- C) 1,131
- D) 8,839

E) none of the above

129) Determine the portion if the base is \$2,000 and the rate is 4.75%. 129) _____

- A) \$95
- B) \$9,500
- C) \$42,105.26%
- D) \$42.11

130) Find the rate when the portion is \$87 and the base is \$480. 130) _____

- A) 18.125%
- B) 5.5172%
- C) 0.18125%
- D) 55.172%

131) What number is $24\frac{1}{2}$ % of 500? 131) _____

- A) 20.4082
- B) 122.5
- C) 2,040.82
- D) 12,250

132) Find 8.5% of 0.3. 132) _____

- A) 0.0255
- B) 0.255
- C) 0.353
- D) 3.529

133) What number is 0.5% of 78? 133) _____

- A) 156
- B) 39
- C) 1.56
- D) 0.39

134) What percent of 0.75 is .6? 134) _____

- A) 8%
- B) 80%
- C) 0.08%
- D) 0.8%

135) What percent of 6 is 27? 135) _____

- A) 4.5% B) $22\frac{1}{5}\%$ C) $\frac{1}{5}\%$ D) 450%

136) 405 is what percent of 45? 136) _____
A) 10% B) 100% C) 900% D) 9%

137) 64.288 is 28.7% of what number? 137) _____
A) 224 B) 18.45 C) 1.845 D) 2.24

138) 112% of what number is 560? 138) _____
A) 500 B) 5,000 C) 62,720 D) 627.2

139) 0.87 is 12.9% of what number? 139) _____
A) 6.7442 (rounded) B) 11.223 (rounded)
C) 674.42 (rounded) D) 0.11223 (rounded)

140) The voltage of a generator is 220V. If approximately 8V are lost in a supply line, what is the rate of voltage loss?
140) _____

- A) 96.36% (rounded) B) 17.6% (rounded)
C) 3.64% (rounded) D) 0.04% (rounded)

141) James ordered 130 individual party items. When the shipping bill was examined, he estimated 28% of the shipment was back ordered. How many items, to the nearest item, were back ordered? 141) _____

- A) 94 B) 35 C) 36 D) 37

142) If 298 students of an original enrollment of 894 finished a course, what percentage finished? 142) _____

- A) 33% B) $33\frac{1}{3}\%$ C) $\frac{1}{3}\%$ D) 3%

143) 18% of 518 is what number? (nearest whole number) Use the percentage formula. 143) _____

- A) 29
B) 93
C) 288
D) 35
E) none of the above

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

144) A businessman is charged a \$9.92 monthly finance charge on a bill of \$566.30. What is the monthly interest rate on the account? (Round to the nearest hundredth of a percent.) 144) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

145) 57.2% of what number is 321.87? (nearest whole number) Use the percentage formula. 145) _____

- A) 1,841
B) 563
C) 184
D) 5,627
E) none of the above

146) 14% of 348 is what number? (nearest whole number) Use the percentage formula. 146) _____

- A) 48
- B) 4,872
- C) 49
- D) 25
- E) none of the above

147) Find the rate when the portion is 27 and the base is 60. 147) _____
 A) 162% B) 222% C) 61.7% D) 45%

148) Determine the portion if the base is 140 and the rate is 18%. 148) _____
 A) 777.8 B) 25.2 C) 165.2 D) 12.9

149) What is the base if the portion is 35.482 and the rate is 78.5%? 149) _____
 A) 45.2 B) 100 C) 27.85337 D) 36.9

150) Determine the portion if the base is 56 and the rate is 112%. 150) _____
 A) 112.00 B) 119.72 C) 62.72 D) 56.12

151) What is the base if the portion is 24 and the rate is $33\frac{1}{3}\%$? 151) _____
 A) 8 B) 0.125 C) 72 D) 100

152) Find the rate when the portion is 356 and the base is 534. 152) _____
 A) 150% B) $\frac{2}{3}\%$ C) $66\frac{2}{3}\%$ D) 9%

153) Find 442% of 540. 153) _____
 A) 12,217.19 B) 238.68 C) 122.17 D) 2,386.8

154) What percent of 0.25 is 0.14? 154) _____
 A) 56% B) 5.6% C) 1.78% D) 17.86%

155) 17% of what number is 5.5? 155) _____
 A) 32.35 B) 37.85 C) 30.15 D) 35.05

156) 31.6% of what number is 712.34? (nearest whole number) Use the percentage formula. 156) _____
 A) 4
 B) 23
 C) 2,254
 D) 2,251
 E) none of the above

157) What percent of \$127,345.56 is \$28,907.42? 157) _____
 A) 22.7% B) 440% C) 44% D) 4.4%

Translate the word statement into a percent proportion. Do not solve.

158) 16 is 55% of what number? 158) _____
 A) $\frac{55}{b} = \frac{16}{100}$ B) $\frac{55}{16} = \frac{p}{100}$ C) $\frac{a}{16} = \frac{55}{100}$ D) $\frac{16}{b} = \frac{55}{100}$

159) 32 is 54% of what number? 159) _____
 A) $\frac{32}{b} = \frac{54}{100}$ B) $\frac{a}{32} = \frac{54}{100}$ C) $\frac{54}{b} = \frac{32}{100}$ D) $\frac{54}{32} = \frac{p}{100}$

160) What number is 10% of 83? 160) _____
 A) $\frac{10}{83} = \frac{p}{100}$ B) $\frac{83}{b} = \frac{10}{100}$ C) $\frac{a}{10} = \frac{100}{83}$ D) $\frac{a}{83} = \frac{10}{100}$

161) What number is 132% of 21? 161) _____
 A) $\frac{132}{21} = \frac{p}{100}$ B) $\frac{a}{132} = \frac{100}{21}$ C) $\frac{21}{b} = \frac{132}{100}$ D) $\frac{a}{21} = \frac{132}{100}$

162) What percent of 59 is 6? 162) _____
 A) $\frac{59}{6} = \frac{p}{100}$ B) $\frac{6}{59} = \frac{p}{100}$ C) $\frac{a}{59} = \frac{6}{100}$ D) $\frac{59}{b} = \frac{6}{100}$

163) What percent of 96 is 19? 163) _____
 A) $\frac{19}{96} = \frac{p}{100}$ B) $\frac{96}{b} = \frac{19}{100}$ C) $\frac{96}{19} = \frac{p}{100}$ D) $\frac{a}{96} = \frac{19}{100}$

164) 25 is 149% of what number? 164) _____
 A) $\frac{a}{25} = \frac{149}{100}$ B) $\frac{149}{b} = \frac{25}{100}$ C) $\frac{25}{b} = \frac{149}{100}$ D) $\frac{149}{25} = \frac{p}{100}$

165) 3.9 is what percent of 9.7? 165) _____
 A) $\frac{3.9}{9.7} = \frac{100}{b}$ B) $\frac{3.9}{9.7} = \frac{p}{100}$ C) $\frac{a}{9.7} = \frac{3.9}{100}$ D) $\frac{9.7}{3.9} = \frac{p}{100}$

Solve using the percentage proportion.

166) 58 is 116% of what number? 166) _____
 A) 134.56 B) 50 C) 500 D) 13,456

167) 140% of what number is 84? 167) _____
 A) 60 B) 600 C) 19,600 D) 196

168) What percent of 55 is 44? 168) _____
 A) 75% B) 120% C) 80% D) 125%

169) What percent of 50 is 20? 169) _____
 A) 20% B) 192% C) 96% D) 40%

Provide an appropriate response.

170) What percent of 345.6 is 78.9? (nearest whole percent) Use the percentage formula. 170) _____

- A) 23%
- B) 43%
- C) 27%
- D) 3%

E) none of the above

171) 18.9% of what number is 497.09? (nearest whole number) Use the percentage proportion. 171) _____

- A) 263
- B) 940
- C) 2,630
- D) 9,395
- E) none of the above

172) Determine the portion if the base is 25 and the rate is 6.4%. Use the percentage proportion. 172) _____
 A) 1.6 B) 100 C) 0.064 D) 390.625

173) Find the rate when the portion is 20 and the base is 16. Use the percentage proportion. 173) _____
 A) 0.0125% B) 1.25% C) 80% D) 125%

174) Find the value of the letter in the proportion $\frac{0.7}{4} = \frac{x}{12}$. 174) _____

- A) .23 B) 0.48 C) 68.57 D) 2.1

175) 25% of 56 is what number? Use the percentage proportion. 175) _____
 A) 224 B) 1,400 C) 14 D) 2.24

176) Find 350% of 42. Use the percentage proportion. 176) _____
 A) 147 B) 1,470 C) 14.7 D) 14,700

177) What percent of 12 is 16? Use the percentage proportion. 177) _____

- A) 4% B) $133\frac{1}{3}\%$ C) $\frac{3}{4}\%$ D) 75%

178) 9.512 is what percent of 116? Use the percentage proportion. 178) _____
 A) 0.082% B) 12.195% C) 8.2% D) 1219.5%

179) 42% of what number is 27.636? Use the percentage proportion. 179) _____
 A) 11.607 B) 65.8 C) 0.658 D) 0.116

180) 200 is 200% of what number? Use the percentage proportion. 180) _____
 A) 100 B) 10 C) 1,000 D) 1

181) A farmer bought 120 piglets at the local auction. He was able to raise 115 of them to market weight. What percent, to the nearest tenth percent, of loss did he incur? 181) _____

- A) 4.2% B) 1.04% C) 95.8% D) 4.1%

182) What rate gives a percentage of 10 with a base of 50? 182) _____
 A) 50% B) 10% C) 20% D) 100%

183) 15 is what percent of 20? 183) _____
 A) 25% B) 13.3% C) 133% D) 75%

184) Determine the base if 35% of the base yields 42. 184) _____
 A) 77 B) 120 C) 14.7 D) 83.3

185) 23% of what number is 64? 185) _____
 A) 288 B) 268 C) 258 D) 278

186) Determine the percentage of 72% of 540. 186) _____
A) 133 B) 750 C) 75 D) 388.8

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

187) Find and explain any mistake in the following problem. What percent of 40 is 120?

$$\frac{R}{100} = \frac{40}{120}$$

$$120 \times R = 100 \times 40$$

$$120R = 4,000$$

$$R = 4,000 \div 120$$

$$R = 33\frac{1}{3}$$

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Solve the sales tax problem.

188) The purchase price of a camera is \$230. If the sales tax rate is 7.9%, find the sales tax. Round to the nearest cent.
188) _____

A) \$0.79 B) \$181.70 C) \$18.17 D) \$248.17

189) The purchase price of a sofa is \$1,005. If the sales tax rate is 6.8%, what is the overall price? Round to the nearest cent.
189) _____

A) \$68.34 B) \$1,688.40 C) \$1,073.34 D) \$683.40

190) A coat costs \$46, plus \$4.14 in sales tax. What is the tax rate? 190) _____

A) 9% B) 0.083% C) 0.09% D) 0.91%

191) The sales tax on the purchase of a van is \$2,992.44. If the tax rate is 6.6%, find the purchase price. Round to the nearest cent. 191) _____

A) \$48,332.44 B) \$1,356,772.30 C) \$45,340.00 D) \$29,924.40

Solve the commission problem.

192) A salesperson earned a commission of \$2,604 for selling \$43,400 worth of office supplies to various stores. Find the commission rate. 192) _____

A) 1.7% B) 6% C) 16.7% D) 0.6%

193) A salesperson earned \$3,625 for selling chemicals to industry. If his commission rate is 5%, find the selling price of the chemicals. 193) _____

A) \$72,500 B) \$73,500 C) \$715,000 D) \$725,000

Solve the discount problem.

194) A dress shop is having a sale for 35% off original prices. A dress has an original price of \$300.00. What is the discount? What is the sale price? Round to the nearest cent. 194) _____

- A) \$105.00; \$195.00 B) \$10.50; \$195.00
C) \$10.50; \$2,895.00 D) \$105.00; \$2,895.00

195) A lamp originally priced at \$290 is on sale at 35% off. Find the discount. Round to the nearest cent. 195) _____

- A) \$188.50 B) \$101.50 C) \$10.15 D) \$279.85

196) A painting originally priced at \$210 is on sale at 10% off. Find the sale price. Round to the nearest cent. 196) _____

- A) \$2,079.00 B) \$2.10 C) \$21.00 D) \$189.00

197) Jack used a coupon for 10% off the price of a printer. Find the sale price when the original price is \$177.30. Round to the nearest cent. 197) _____

- A) \$1.77 B) \$159.57 C) \$17.73 D) \$175.53

198) Peggy received a \$21.80 discount on an office chair that normally sells for \$109.00. Find the discount rate. 198) _____

- A) 80% B) 1% C) 8% D) 20%

Solve the simple interest problem. Round to the nearest cent.

199) If Stephen borrows \$660 for 8 years at a simple interest rate of 8% per year, how much interest will he have to pay for this loan? 199) _____

- A) \$4,224.00 B) \$52.80 C) \$422.40 D) \$528.00

200) Lucy borrows \$9,300 at 2% simple interest for 3 years. How much interest will she pay for this loan? 200) _____

- A) \$5,580.00 B) \$14,880.00 C) \$9,858.00 D) \$558.00

201) If Janus makes an investment of \$70,000 at a simple interest rate of 5% for 3 years, then what is the overall amount of money that she will have at the end of the 3-year period? 201) _____

- A) \$80,400.00 B) \$80,442.43 C) \$80,700.00 D) \$80,500.00

Provide an appropriate response.

202) After the market value on a home went up 20%, it was listed at \$78,000. What was the original cost? 202) _____

- A) \$93,600 B) \$65,000 C) \$62,400 D) \$15,600

203) What was the rate of increase of inflation if an object that originally cost \$750 now is priced at \$824 due to inflation? 203) _____

- A) 1.099% (rounded) B) 91.02% (rounded)
C) 9.9% (rounded) D) 9.1% (rounded)

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

204) Shawna works as a car salesperson and receives an 8% commission on sales. How much will her commission be on

sales of \$4,200? 204) _____

205) An employee's gross earnings for a month are \$1,750. If the net pay is \$1,273, what percent of the gross pay are the total deductions? (nearest whole percent) 205) _____

206) An employer must match an employee's social security contributions. If the weekly payroll is \$27,542 and the FICA rate is 7.65%, what are the employer's contributions? (All employees' year-to-date salaries were under the minimum salary subject to the FICA tax.) 206) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

207) If an over-the-counter drug contains 97.6% active ingredients, how much active ingredients is there for a 400 mg dosage? 207) _____

- A) 390.4 mg B) 39.04 mg C) 4.10 mg D) 40.98 mg

208) Cast iron contains 4.25% carbon. If a bar contains 13.6 pounds of carbon, how heavy is the bar? 208) _____
A) 3.2 lb B) 320 lb C) 57.8 lb D) 0.578 lb

209) George makes a monthly gross income of \$2,508.10. His net salary is \$1,755.67. What percent of his salary is the total of the deductions, rounding to nearest whole percent? 209) _____

- A) 70% B) 35% C) 65% D) 30%

210) A real estate agent makes a 5.4% commission. What does the agent make on a \$129,900 home? 210) _____
A) \$122,885.40 B) \$24,055.56 C) \$7,014.60 D) \$701.46

211) A credit-card service charges a finance charge of $2\frac{3}{4}$ % per month on the average daily balance of the account. If the average daily balance on an account is \$321.82, what is the finance charge for the month? 211) _____

- A) \$88.50 B) \$2.75 C) \$7.53 D) \$8.85

212) Tuan gets a 3.5% raise each year. His beginning salary is \$21,500. What is his salary after three such raises? 212) _____

- A) \$23,031.34 B) \$22,575 C) \$66,757.50 D) \$23,837.43

213) You invest \$12,000 at 7% for one year. Federal taxes take 15% of the interest earned. How much is in your account after 1 year? 213) _____

- A) \$12,714 B) \$840 C) \$12,840 D) \$714

214) You save \$12,000 at 7% for one year. Federal taxes take 15% of the interest earned. By what percent did your investment actually grow? 214) _____

- A) 10.5% B) 8% C) 22% D) 5.95%

215) Charles collects baseball memorabilia. He bought two autographed plaques. He needed some quick cash so he sold each of them for \$300 each. On one he made 25% profit and lost 25% on the second one. Did he make or lose money on the

sale and how much? 215) _____

- A) He lost money. B) He stayed even. C) He made money.

216) The tolerance range for a pressure gauge is 2% on the low end and 3.5% on the high range. If the desired reading is 2.05 psi, what is the range for the gauge to the nearest thousandth? 216) _____

- A) 1.978 psi - 2.122 psi B) 2.009 psi - 2.122 psi
C) 2.009 psi - 2.091 psi D) 1.978 psi - 2.091 psi

217) Rolland's pay stub showed a 10% deduction for state tax, a 28% deduction for federal taxes, 6.6% for social security tax, a 7% pension plan deduction, and a \$150 annuity plan deduction. His gross for the month was \$2,742.44. What was his net pay? 217) _____

- A) \$1,177.34 B) \$1,415.10 C) \$1,327.3 D) \$1,265.10

218) An electrician makes an investment of \$1,400. It returns \$33.25 in simple interest at the end of 3 months. What is the yearly interest rate? 218) _____

- A) 7.125% B) 9.5% C) 2.375% D) 5.8%

219) A supply warehouse gave a deduction of \$43.25 for each of 8 items, a deduction of \$31.09 for each of 12 items, and a deduction of \$102.97 for each of 6 items. If the original bill was \$5,570.42, what is the total rate of deduction given? 219) _____

- A) 96.82% B) 24% C) 3.18% D) 76%

220) The weight of a person's brain is 2.5% of the total body weight. If a person weighs 150 pounds, how heavy is his brain? 220) _____

- A) 6 pounds B) 3.75 pounds C) 0.167 pounds D) 60 pounds

221) If a business sends out 2,000 brochures to a list of customers and expects to lose 350 of them to mail changes, what percent is lost? 221) _____

- A) 1.2% B) 70% C) 5.17% D) 17.5%

222) A restaurant sold 148 desserts one night, to 80% of their customers. How many customers did they have that evening? 222) _____

- A) 185 B) 228 C) 740 D) 148

223) Juan earns \$235 each week plus a 7% commission on all sales over \$3,000. Last week he had \$11,700 in sales. What was his income for the week? 223) _____

- A) \$445 B) \$844 C) \$1,054 D) \$819

224) If you paid \$44.88 in simple interest for a year on a loan at a rate of 8.8%, what would be the amount of the loan? 224) _____

- A) \$394.94 B) \$510 C) \$409.31 D) \$492.11

225) What is the interest on \$25,000 principal at the interest rate of 6% for $\frac{1}{4}$ year? 225) _____

A) \$1,500 B) \$375 C) \$104 D) \$416

226) A business paid a \$6.32 finance charge on a monthly balance of \$412.52. What was the monthly rate of interest? Round to the nearest hundredth. 226) _____

A) 6.5% B) 18.36% C) 1.63% D) 1.53%

227) Simone was pleased with her service at a local restaurant where she had entertained some friends for dinner. She left a tip of \$44 for a bill of \$195.55. What tip rate did she leave for the service? 227) _____

A) 5.4% B) 18.4% C) 4.44% D) 22.5%

228) Sarah Smith is redecorating the home where she has retired and plans to tile the kitchen, utility room, and bonus room floors. The kitchen is 18 feet by 13 feet, the utility room is 10 feet by 11 feet, and the bonus room is 10 feet by 13 feet. How many square feet of tile should she purchase if she should order 5% more than the calculated amount to ensure having enough to account for breakage and for using partial pieces? 228) _____

A) 79 square feet B) 498 square feet C) 474 square feet D) 158 square feet

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

229) A credit card charges $2\frac{1}{2}$ % interest per month on the average daily unpaid balance of the account. What would be the finance charge for one month on a balance of \$567.89? 229) _____

230) Missouri charges a 6% sales tax, and Springfield, MO, charges an additional .655% city sales tax. What would be the tax on a purchase of seven cans of ground-marking spray paint that cost \$2.75 each? 230) _____

231) An automobile repair person receives a salary of \$350 per week plus a 5% commission on all the repairs he makes for the garage. Last week, he completed \$1,300 worth of repairs. What was his gross salary? 231) _____

232) Drew Aberle wanted to buy a new car and finance it through the bank. The bank has a policy that requires that the monthly payment on a car loan be no more than 8% of the monthly income. How much can Drew afford to pay if his annual income is \$29,580? 232) _____

233) A life insurance salesman earns a 3% commission on his sales. What will be his commission earnings on the \$156,000 worth of life insurance that he sold last month? 233) _____

234) Rosa Kavanaugh teaches drafting at a technical college and pays into the state teachers' retirement fund instead of Social Security. The rate that is deducted from her paycheck is 10.45% of her gross salary. She makes \$3,560 a month. What is her retirement deduction? 234) _____

235) A respiratory therapist works for a for-profit hospital that allows her to contribute into a 401K plan for retirement.

The maximum that she can contribute is 15% of her salary. If she makes \$42,000 in annual salary, what is the maximum that she can have deducted each month? 235) _____

236) On a test with 80 items, Bryan Chapman had 76 correct. What percent did he have correct? 236) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use percents, percent equations, and/or percent proportions to solve the application.

237) There are approximately 1,111,529 registered nurses in a given country. It is expected that this number will grow to 1,544,091 over the next three years. What is the percent increase? Round to the nearest tenth of a percent. 237) _____

A) 28.0% B) 2.8% C) 3.9% D) 38.9%

238) A community college raises its tuition from \$330 per course to \$352 per course. What is the percent increase? Round to the nearest tenth of a percent, if necessary. 238) _____

A) 6.3% B) 93.7% C) 93.3% D) 6.7%

239) A company has 25 franchises in China. This number is expected to increase to 32 over the next three years. What is this percent increase? 239) _____

A) 72% B) 7% C) 28% D) 21.9%

240) Ms. Robert bought a house five years ago for \$220,000. Today it is valued at \$210,000. Find the percent decrease in value of the house. 240) _____

A) 4.8% B) 95.5% C) 4.5% D) 2,100%

241) Students enrolled in a prealgebra class can withdraw within the first two weeks without receiving a grade. If there were 30 students registered for class on the first day and 22 remaining at the end of the second week, what was the percent decrease in students for the first two weeks? Round to the nearest tenth of a percent, if necessary. 241) _____

A) 26.7% B) 73.3% C) 63.6% D) 36.4%

242) Jeremy switches from drinking regular soda to drinking diet soda. If his regular soda contains 205 mg of sodium per liter and the diet soda contains 200 mg of sodium, find his percent decrease in calories by switching from regular to diet soda. 242) _____

A) 50.6% B) 2.4% C) 97.6% D) 2.5%

Solve the problems.

243) The normal gasoline mileage of a car is 44 mpg. On a smooth road, its mileage is 12% higher. What is its mileage on a smooth road? Round your answer to the nearest tenth. 243) _____

A) 44 mpg B) 50 mpg C) 5.3 mpg D) 49.3 mpg

244) Brand X copier has improved its copier so that it produces 13% more copies than its old model. If the old model ran 419 copies per hour, how many copies would the new model run? Round your answer to the nearest whole number.

244) _____

A) 458 copies per hour B) 473 copies per hour

C) 434 copies per hour D) 224 copies per hour

245) After spending \$3,050 for tables and \$2,250 for chairs a convention center manager finds that the furniture cost 3% more than last year. Find the amount that he spent last year on tables and chairs. Round your answer to the nearest dollar.

245) _____

A) \$2,320 B) \$5,146 C) \$5,464 D) \$159

246) Tom indicates that he received a 7% raise that amounts to \$2,065. What was his former salary? 246) _____

A) \$14,750 B) \$29,500 C) \$32,450 D) \$26,550

247) On a biology test, a student got 25 questions correct but did not pass. On a second attempt, the student got 37 questions correct. What was the percent of increase? 247) _____

A) 12% B) 48% C) 32.4% D) 52%

248) Sales of frozen pizza for a club fund-raiser increased from 500 one year to 555 the next year. What was the percent of increase? 248) _____

A) 90.1% B) 89% C) 11% D) 9.9%

249) Enrollment in a business seminar increased from 62 people to 74 people. What was the percent of increase? Round to the nearest tenth of a percent. 249) _____

A) 19.4% B) 83.8% C) 16.2% D) 80.6%

250) Last year, Maria earned \$378 per week. This year, her salary increased to ~~\$412~~ per week. What is the percent of increase? Round to the nearest tenth of a percent. 250) _____

A) 91.7% B) 9% C) 91% D) 8.3%

251) Midtown Antiques has found that sales have decreased 4% from last year. Sales this year are \$114,631. Find the amount of last year's sales. Round your answer to the nearest dollar. 251) _____

A) \$119,307 B) \$120,407 C) \$119,397 D) \$119,407

252) Jack is currently driving into a headwind (17% decrease). If his normal mileage is 28 mpg, what will his car's mileage be in the headwind? Round your answer to the nearest tenth. 252) _____

A) 7.3 mpg B) 28 mpg C) 23.2 mpg D) 45 mpg

253) Sue buys a house for \$116,000. What is the value of the house 1 year later, if it depreciates by 3.3% in the first year after she buys it? 253) _____

A) \$38,280 B) \$3,828 C) \$112,172 D) \$77,720

254) Mike buys a bike for \$2,800. In the first month after he buys it, it depreciates by 13%. What is the value of the bike after 1 month? 254) _____

A) \$364 B) \$3,164 C) \$2,787 D) \$2,436

255) One year ago, Tony and May bought a house. In the year since they bought the house, it has depreciated 2% from the

amount they paid. Today it is valued at \$143,690. How much did they pay for the house? 255) _____

- A) \$146,522 B) \$146,612 C) \$146,622 D) \$147,622

256) Ms. Clark bought a house five years ago for \$185,000. Today it is valued at \$175,000. Find the percent decrease in value of the house. 256) _____

- A) 5.7% B) 1,750% C) 5.4% D) 94.6%

257) Students enrolled in a prealgebra class can withdraw within the first two weeks without receiving a grade. If there were 32 students registered for class on the first day and 27 remaining at the end of the second week, what was the percent decrease in students for the first two weeks? Round to the nearest tenth of a percent, if necessary. 257) _____

- A) 81.5% B) 18.5% C) 15.6% D) 84.4%

258) Jeremy switches from drinking regular soda to drinking diet soda. If his regular soda contains 320 mg of sodium per liter and the diet soda contains 300 mg of sodium, find his percent decrease in calories by switching from regular to diet soda. 258) _____

- A) 6.3% B) 6.7% C) 93.8% D) 51.6%

259) By switching service providers, a family's telephone bill decreased from about \$50 a month to about \$45. What was the percent of decrease? 259) _____

- A) 11% B) 11.1% C) 5% D) 10%

260) All 39 of the students in a mathematics class attended class on Monday. On Tuesday only 27 students attended. What was the percent of decrease? Round to the nearest tenth of a percent. 260) _____

- A) 55.6% B) 69.2% C) 30.8% D) 44.4%

Provide an appropriate response.

261) Find the amount of increase if 48 is increased by 25%. 261) _____

- A) 10 B) 12 C) 60 D) 58

262) Find the amount of decrease if 85 is decreased by 16%. 262) _____

- A) 13.6 B) 5.3125 C) 0.136 D) 71.4

263) There is 5% waste of supplies in an office. If the office manager's supply budget is \$200 each month, how much does the waste cost? 263) _____

- A) \$205.00 B) \$10.00 C) \$210.00 D) \$100.00

264) California requires a 6% sales tax on all purchases for California residents even if purchased on the Internet. Sue lives in California and purchased a small computer system for \$650 from an Internet source. How much sales tax did she pay?

264) _____

- A) \$39.00 B) \$689.00 C) \$656.00 D) \$6.00

265) A 3% discount is given if you pay cash at the gas pump. The pump showed a charge of \$16.00 before the discount. How much is saved with the discount? 265) _____

A) \$0.48 B) \$4.80 C) \$11.20 D) \$15.52

266) Find the amount of increase if 116 is increased by 25%. 266) _____
A) 145 B) 464 C) 29 D) 348

267) National sales of a certain product have increased 54%. If there were 98.6 billion dollars in sales last year, how many dollars had the sales increased? 267) _____

A) 151.844 billion B) 45.356 billion C) 34.574 billion D) 1,079.46 billion

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

268) Sally Clark is working as a waitress to pay her way through school. She waits on a businessman who, with his client, has a bill of \$72.50. The businessman states that she is to add a 15% tip to the bill. How much tip will Sally receive?
268) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

269) Find the amount of increase if 500 is increased by 120%. 269) _____
A) 620 B) 600 C) 1,100 D) 100

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

270) If a quantity decreases 50%, is the new amount half the original amount? Explain your answer.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use rational equations to solve the problems.

271) Approximately 28% of Samantha's gross monthly income is deducted for Social Security, federal withholdings, state withholdings, insurance, etc. If her gross monthly salary is \$2,542, then what is her net pay? 271) _____

A) \$965.96 B) \$711.76 C) \$1,576.04 D) \$1,830.24

272) 1.45% of gross monthly income goes to Medicare. If a person's gross pay is \$713.49, then what is the Medicare contribution? 272) _____

A) \$5.17 B) \$1,034.56 C) \$20.69 D) \$10.35

273) Midtown Antiques has found that sales have decreased 6% from last year. Sales this year are \$112,408. Find the amount of last year's sales. Round your answer to the nearest dollar. 273) _____

A) \$120,583 B) \$119,573 C) \$119,583 D) \$119,483

274) If 27% of Karen's gross monthly salary results in total deductions of \$700.80, then what is her gross monthly salary?
274) _____

A) \$2,855.11 B) \$2,336.00 C) \$5,191.11 D) \$2,595.56

275) Mario's retirement deduction from his monthly pay is \$181.94. If the retirement deduction is 7% of his gross monthly salary, then what is his gross monthly salary? 275) _____

A) \$3,118.97 B) \$2,339.23 C) \$2,599.14 D) \$2,079.31

276) After deductions, Mark's net pay is \$757.98. If the total of the deductions was 33% of his gross two-week pay, then what was his gross two-week salary? 276) _____

- A) \$2,296.90 B) \$2,396.90 C) \$2,096.90 D) \$2,196.90

Provide an appropriate response.

277) A heat pump unit allows a 5% room temperature drop before it starts back up. If the room temperature is 72°, what temperature does it drop to before the heat pump kicks in? 277) _____

- A) 77° B) 68.4° C) 67° D) 75.6°

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

278) Find the mistake and correct the problem:

What percent of 30 is 150?

$$R = \frac{30}{150} \times 100\%$$

$$R = \frac{1}{5} \times 100\%$$

$$R = 20\% \text{ 278) } \underline{\hspace{2cm}}$$

279) Find the complement of 23%. 279) _____

280) Find the complement of 65%. 280) _____

281) Find the complement of 15.5%. 281) _____

282) Find the complement of 1.2%. 282) _____

283) A worker took a 10% decrease in his salary. What is his monthly salary now, if before the pay cut he was making \$1,200 per month? 283) _____

284) A buyer was offered a discount of 10% and then a discount of 30%. She assumed this was the same as a 40% discount and offered \$60 for the \$100 item she purchased. What should the correct price be? 284) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

285) The Terrific Tile company always takes 16% extra tiles when they go out on a job. The job they are working requires 1,250 tiles. How many tiles did they take for this job? 285) _____

- A) 78 B) 1,450 C) 200 D) 1,050

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

286) The specifications for the fabrication of a part for a prototype machine call for a length of 82.5 mm. If a tolerance of $\pm 0.4\%$ is allowed, find the limit dimensions for the part's length. 286) _____

287) The specifications for the fabrication of a part for a prototype machine call for a length of 6.2 cm. If a tolerance of $\pm 0.5\%$ is allowed, find the limit dimensions for the part's length. 287) _____

288) A computer store purchased keyboards for resale. They will have a selling price of \$28.50 each, but the store bought them for a 30% discount. How much did the store pay for each keyboard? 288) _____

289) A store selling construction supplies purchased cordless drills for resale. They will have a selling price of \$58.75 each, but the store bought them for a 45% discount. How much did the store pay for each drill? (Round to the nearest cent.)

289) _____

290) In extreme temperatures, concrete can experience a $\pm 1.2\%$ change in length after it is laid. Considering this, if 20 ft sections of concrete are laid for a bridge during cold weather, what width of expansion joint must be allowed so that the bridge will not buckle in hot weather? Round your answer to the nearest hundredth of a foot. 290) _____

291) In extreme temperatures, pavement can experience a $\pm 1.2\%$ change in length after it is laid. Considering this, if an 30 ft section of pavement is laid during mild weather, what range of lengths could one expect to see as the seasons change from winter to summer? Report your answer to the nearest hundredth of a foot. 291) _____

292) A building supply store offers a 2% discount to contractors who pay their bill within ten days of the date of the invoice. How much will a contractor have to pay if he pays his invoice of \$654.78 within the ten-day period? 292)

293) If the sales-tax rate in an area is 8%, explain how the total bill for an item can be found directly. 293)

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

294) If 250 is decreased by 20%, what is the new amount? 294) _____

A) 200 B) 270 C) 50 D) 300

295) If 80 is increased by 25%, what is the new amount? 295) _____

A) 60 B) 105 C) 100 D) 20

296) If there is a 15% gratuity built into a dinner check, what is the final bill on an order of a party whose food came to \$124? 296) _____

A) \$142.60 B) \$139.00 C) \$18.60 D) \$132.27

297) Pilfering in discount stores occurs at a rate of nearly 35% based on the annual income. The annual estimated income of a nearby discount store is \$582,000. What is the income of the store after pilfering? 297) _____

A) \$1,662,857 B) \$670,035 C) \$203,700 D) \$378,300

298) If 445 is decreased by 55%, what is the new amount? 298) _____

A) 122 B) 818 C) 200.25 D) 244.75

299) Find the new amount if 4,500 is increased by 20%. 299) _____

A) 3,600 B) 900 C) 5,400 D) 9,900

300) If the price of gasoline decreased by 8% per gallon, what would be the new price per gallon from \$1.39 per gallon, rounded to the nearest cent? 300) _____

A) \$1.11 B) \$2.38 C) \$1.50 D) \$1.28

301) If the local sales tax rate is 5.5% and an additional motel tax of 4.8% is charged to a \$145 room, what is the total room bill? 301) _____

A) \$159.94 B) \$145.00 C) \$151.96 D) \$152.98

302) The population of a small city of 123,000 was increased by 3.3% during the past year. What is the new population? 302) _____

A) 1,270,590 B) 4,059 C) 372,727 D) 127,059

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

303) Which is better: a discount of 40%, or a discount of 20% followed by another of 20%? Explain.

304) If the yearly increase in population for a town is 3.5%, explain why 103.5% of the original population represents the new population.

305) If an article is discounted 35%, then the cost of the item is what percent of the original cost? Explain.

306) A sales clerk determined the total bill on a sale of \$14 with a sales tax rate of 5%. He multiplied \$14 by 1.05 and determined the answer to be \$14.70. Show another method to verify this answer.

307) How many successive 10% discounts are necessary to lower the price of an item to below 50% of its original price? Justify your answer.

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Use rational equations to solve the problems.

308) After receiving a discount of 8.5% on its bulk order of typewriter ribbons, John's Office Supply pays \$2,928. What was the price of the order before the discount? 308) _____

A) \$3,177 B) \$2,826 C) \$3,200 D) \$2,679

309) Fred purchased a computer monitor on sale for 30% off. If the discount amount was ~~\$128.49~~, then what was the initial price? 309) _____

A) \$528.3 B) \$578.3 C) \$428.3 D) \$628.3

310) A computer is on sale for 20% off. If the discount amount is \$280.58, then what is the initial price? 310) _____

A) \$2,902.88 B) \$1,402.88 C) \$902.88 D) \$2,402.88

311) The sales tax on a freezer is \$23.05 and the sales tax rate is 7%. Find the purchase price (the price before taxes are added) and the total price paid. Round your answers to the nearest cent. 311) _____

A) \$32.93, \$55.98 B) \$288.13, \$311.18
C) \$329.29, \$352.34 D) \$384.17, \$407.22

312) The total price (including sales tax) of a VCR is \$599.82. The sales tax rate is 8%. What is the purchase price of the

VCR (the price before taxes are added)? Round your answer to the nearest cent. 312) _____

- A) \$560.58 B) \$333.23 C) \$550.29 D) \$555.39

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Provide an appropriate response.

313) A lathe which cost \$700 was sold for \$626. What was the percent of decrease in the price of the lathe? (nearest whole percent) 313) _____

314) A rough cast weighs 43.6 kg. After finishing on a lathe, it weighs 38.4 kg. Find the percent of weight loss to nearest whole number percent. 314) _____

315) A shop foreman records a 15% loss on rivets for waste. If the shop needs 25 lb of rivets, how many pounds must be ordered to compensate for the loss due to the waste? (nearest whole pound) 315) _____

316) Carpet selling for \$6.90 per square yard is marked down to \$5.60 per square yard. What was the percent decrease? (Round answer to nearest tenth of a percent.) 316) _____

317) The total price of some lumber was \$450. This price includes the sales tax of 5%. How much was the lumber? 317) _____

318) Bert Simmons is a supervisor in a factory. He recently received a raise from \$1,100 to \$1,160.50 every two weeks. What was his percent of increase? 318) _____

319) Melinda received a salary of \$560 which included an 8% raise. How much was her salary before the raise? 319) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

320) Jerry was shopping and bought a saw for \$46.17. If that total included the 5% sales tax, what was the price of the saw without the tax? 320) _____

- A) \$43.86 B) \$48.48 C) \$43.97 D) \$2.31

321) An engine that has a 4% loss of power has an output of 480 hp. What is the input horsepower of the engine? 321) _____

- A) 460.80 hp B) 500 hp C) 499.2 hp D) 120 hp

322) The cost of a $4 \times 4 \times 8$ -cedar fence post went from \$4.82 to \$5.17. What was the rate of increase? 322) _____
A) 93.2% B) 7.3% C) 6.8% D) 107.3%

323) A computer company posts a net profit of \$12,256 for the month of January. In April, they report a net profit of \$23,654. To the nearest tenth of a percent, what was the percent increase in their net profit from January to April? 323) _____

- A) 193.0% increase B) 51.8% increase
C) 93.0% increase D) 48.2% increase

324) The price of a cubic yard of concrete increased last year from \$65 to \$78. What was the percent of increase to the nearest percent? 324) _____

- A) 120% B) 20% C) 17% D) 83%

325) After Alaska and Hawaii joined the union, the total land area of the United States changed from 2,963,680 square miles to 3,540,940 square miles. What was the percent of increase to the nearest hundredth percent? 325) _____

- A) 119.48% B) 19.48% C) 83.70% D) 1.19%

326) The local property tax increased from \$37 per thousand of assessed value to \$42 per thousand of assessed value during the last year. What is the rate of increase in property tax for the year to the nearest tenth of a percent? 326) _____

- A) 8.8% B) 13.5% C) 11.35% D) 1.135%

327) The local school budget needed to be cut by \$300,000. If the budget was originally set at \$1,543,000, what is the percent of decrease needed? 327) _____

- A) 1.94% B) 19.4% C) 51.4% D) 5.14%

328) Given normal use, a car will depreciate 28% of its original cost the first year and 12% of the remaining value in the second year. What was the initial cost of a car if it had a value of \$12,600 at the end of the second year? 328) _____

- A) \$45,000 B) \$19,886.36 C) \$105,000 D) \$35,280

329) A "2x4" board is originally cut at 2 in. by 4 in. If the curing and finishing process give a final measurement of $1\frac{1}{2}$ in. by $3\frac{1}{2}$, what percent in width is lost in the process? 329) _____

- A) 34.75% B) 25% C) 50% D) 75%

330) Millie went shopping and found a dress that had been marked down from \$53.95 to \$42.95 to \$21.50 to \$14.50. What percent of the original cost did she save? 330) _____

- A) 129% B) 73% C) 50% D) 27%

331) The mold on a pipefitting allows for 1.2% shrinkage. What is the original length if the final length of the fitting is 0.247 mm? 331) _____

- A) 0.3 mm B) 0.2058 mm C) 0.2964 mm D) 0.25 mm

- 1) B
- 2) D
- 3) B
- 4) C
- 5) C
- 6) B
- 7) C
- 8) C
- 9) C
- 10) D
- 11) D
- 12) B
- 13) D
- 14) B
- 15) A
- 16) C
- 17) D
- 18) A
- 19) C
- 20) D
- 21) D
- 22) D
- 23) C
- 24) D
- 25) D
- 26) C
- 27) C
- 28) B
- 29) C
- 30) B
- 31) B
- 32) D
- 33) A
- 34) A
- 35) D
- 36) D
- 37) C
- 38) D
- 39) A
- 40) C
- 41) A
- 42) A
- 43) A
- 44) C
- 45) A
- 46) C
- 47) B
- 48) A
- 49) A
- 50) A
- 51) D

- 52) A
- 53) C
- 54) D
- 55) C
- 56) A
- 57) D
- 58) C
- 59) D
- 60) C
- 61) B
- 62) B
- 63) A
- 64) A
- 65) A
- 66) D
- 67) C
- 68) B
- 69) B
- 70) C
- 71) C
- 72) B
- 73) B
- 74) B
- 75) C
- 76) B
- 77) D
- 78) B
- 79) B
- 80) C
- 81) C
- 82) B
- 83) D
- 84) D
- 85) D
- 86) C
- 87) A
- 88) B
- 89) A
- 90) B
- 91) B
- 92) C
- 93) D
- 94) B
- 95) A
- 96) D
- 97) B
- 98) B
- 99) D
- 100) B
- 101) B
- 102) A
- 103) C

104) B
105) A
106) C
107) A
108) A
109) D
110) B
111) D
112) D
113) C
114) A
115) A
116) A
117) C
118) D
119) C
120) C
121) B
122) B
123) C
124) A
125) B
126) D
127) B
128) A
129) A
130) A
131) B
132) A
133) D
134) B
135) D
136) C
137) A
138) A
139) A
140) C
141) C
142) B
143) B
144) 1.75%
145) B
146) C
147) D
148) B
149) A
150) C
151) C
152) C
153) D
154) A
155) A

- 156) C
- 157) A
- 158) D
- 159) A
- 160) D
- 161) D
- 162) B
- 163) A
- 164) C
- 165) B
- 166) B
- 167) A
- 168) C
- 169) D
- 170) A
- 171) C
- 172) A
- 173) D
- 174) D
- 175) C
- 176) A
- 177) B
- 178) C
- 179) B
- 180) A
- 181) A
- 182) C
- 183) D
- 184) B
- 185) D
- 186) D
- 187) Answers will vary.
- 188) C
- 189) C
- 190) A
- 191) C
- 192) B
- 193) A
- 194) A
- 195) B
- 196) D
- 197) B
- 198) D
- 199) C
- 200) D
- 201) D
- 202) B
- 203) C
- 204) \$336
- 205) 27%
- 206) \$2,106.96
- 207) A

208) B
209) D
210) C
211) D
212) D
213) A
214) D
215) B
216) B
217) A
218) B
219) B
220) B
221) D
222) A
223) B
224) B
225) B
226) D
227) D
228) B
229) \$14.20
230) \$1.28
231) \$415
232) \$197.20
233) \$4,680
234) \$372.02
235) \$525
236) 95%
237) D
238) D
239) C
240) C
241) A
242) D
243) D
244) B
245) B
246) B
247) B
248) C
249) A
250) B
251) D
252) C
253) C
254) D
255) C
256) C
257) C
258) B
259) D

- 260) C
261) B
262) A
263) B
264) A
265) A
266) C
267) C
268) \$10.88
269) B
270) Answers will vary.
271) D
272) D
273) C
274) D
275) C
276) A
277) B
278) The base is 30, and the percentage is 150.

$$R = \frac{150}{30} \times 100\%$$

$$R = 5 \times 100\%$$

$$R = 500\%$$

- 279) 77%
280) 35%
281) 84.5%
282) 98.8%
283) \$1,080
284) \$100 - 10% - 30% = \$63
285) B
286) From 82.17 mm to 82.83 mm
287) From 6.169 cm to 6.231 cm
288) \$19.95
289) \$32.31
290) 0.24 ft
291) From 29.64 ft to 30.36 ft
292) \$641.68
293) Find 108% of the price of the item.
294) A
295) C
296) A
297) D
298) C
299) C
300) D
301) A
302) D
303) Answers will vary.
304) Answers will vary.
305) Answers will vary.
306) Answers will vary.
307) Answers will vary.

- 308) C
- 309) C
- 310) B
- 311) C
- 312) D
- 313) 11%
- 314) 12%
- 315) 29 lb
- 316) 18.8%
- 317) \$428.57
- 318) 5.5%
- 319) \$518.52
- 320) C
- 321) B
- 322) B
- 323) C
- 324) B
- 325) B
- 326) B
- 327) B
- 328) B
- 329) B
- 330) B
- 331) D