

TEST BANK



**BASIC COLLEGE
MATHEMATICS**

TWELFTH EDITION



BITTINGER / BECHER / JOHNSON

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

Determine if the second number is a factor of the first number.

- | | | |
|-------------|-------|----------|
| 1) 45; 45 | | 1) _____ |
| A) Yes | B) No | |
| 2) 84; 14 | | 2) _____ |
| A) Yes | B) No | |
| 3) 13; 78 | | 3) _____ |
| A) Yes | B) No | |
| 4) 65; 23 | | 4) _____ |
| A) Yes | B) No | |
| 5) 580; 150 | | 5) _____ |
| A) Yes | B) No | |

Find all the factors of the number.

- | | | |
|--|-------------------------------------|-----------|
| 6) 30 | | 6) _____ |
| A) 5, 6, 10, 30 | B) 1, 5, 6, 30 | |
| C) 1, 2, 3, 5, 6, 10, 15, 30 | D) 1, 2, 3, 5, 6, 10, 20, 30 | |
| 7) 28 | | 7) _____ |
| A) 1, 2, 7, 14, 28 | B) 1, 2, 4, 7, 14, 28 | |
| C) 2, 7, 14, 28 | D) 1, 2, 4, 7, 8, 14, 28 | |
| 8) 36 | | 8) _____ |
| A) 1, 2, 3, 4, 5, 6, 9, 10, 12, 18, 36 | B) 2, 4, 6, 12, 18, 36 | |
| C) 1, 2, 4, 6, 12, 18, 36 | D) 1, 2, 3, 4, 6, 9, 12, 18, 36 | |
| 9) 45 | | 9) _____ |
| A) 1, 3, 5, 15, 45 | B) 1, 3, 5, 9, 15, 45 | |
| C) 1, 2, 3, 5, 9, 15, 30, 45 | D) 1, 3, 5, 9, 15, 30, 45 | |
| 10) 56 | | 10) _____ |
| A) 1, 2, 4, 7, 8, 14, 18, 28, 56 | B) 1, 2, 3, 4, 7, 8, 14, 18, 28, 56 | |
| C) 1, 2, 4, 7, 8, 14, 28, 56 | D) 2, 4, 7, 8, 14, 28 | |
| 11) 63 | | 11) _____ |
| A) 1, 3, 5, 7, 9, 11, 21, 63 | B) 1, 3, 7, 9, 21, 63 | |
| C) 1, 2, 3, 7, 9, 21, 36, 63 | D) 3, 5, 7, 9, 11, 21, 63 | |
| 12) 66 | | 12) _____ |
| A) 1, 2, 3, 4, 11, 16, 22, 33, 66 | B) 1, 3, 11, 22, 33, 66 | |
| C) 1, 2, 3, 6, 11, 22, 33, 66 | D) 1, 2, 3, 9, 11, 22, 33, 66 | |
| 13) 70 | | 13) _____ |
| A) 1, 3, 5, 7, 9, 15, 20, 35, 70 | B) 1, 2, 3, 5, 7, 9, 15, 35, 70 | |
| C) 1, 2, 5, 7, 35, 70 | D) 1, 2, 5, 7, 10, 14, 35, 70 | |

- 14) 72
A) 1, 2, 3, 4, 6, 9, 12, 14, 18, 24, 36, 72
B) 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 18, 24, 36, 72
C) 1, 2, 3, 4, 6, 8, 9, 12, 24, 36, 72
D) 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72

- 15) 84
A) 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84
B) 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 14, 21, 28, 42, 84
C) 1, 2, 3, 4, 6, 7, 12, 14, 21, 42, 84
D) 1, 2, 3, 4, 7, 14, 21, 28, 42, 84

Multiply by 1, 2, 3, and so on, to find ten multiples of the number.

- 16) 2
A) 0, 2, 4, 6, 8, 10, 12, 14, 16, 18
B) 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
C) 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
D) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

- 17) 50
A) 0, 55, 60, 65, 70, 75, 80, 85, 90, 95
B) 50, 100, 150, 200, 250, 300, 350, 400, 450, 500
C) 50, 60, 70, 80, 90, 100, 110, 120, 130, 140
D) 50, 110, 170, 230, 290, 350, 410, 470, 530, 590

- 18) 15
A) 15, 17, 20, 24, 29, 35, 42, 50, 59, 69
B) 15, 30, 45, 60, 75, 90, 105, 120, 135, 150
C) 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
D) 0, 15, 30, 45, 60, 75, 90, 105, 120, 135

- 19) 75
A) 0, 80, 85, 90, 95, 100, 105, 110, 115, 120
B) 75, 175, 275, 375, 475, 575, 675, 775, 875, 975
C) 75, 150, 225, 300, 375, 450, 525, 600, 675, 750
D) 75, 85, 95, 105, 115, 125, 135, 145, 155, 165

- 20) 28
A) 28, 29, 30, 31, 32, 33, 34, 35, 36, 37
B) 28, 56, 84, 112, 140, 168, 196, 224, 252, 280
C) 28, 38, 48, 58, 68, 78, 88, 98, 108, 118
D) 28, 30, 33, 37, 42, 48, 55, 63, 72, 82

- 21) 200
A) 200, 210, 220, 230, 240, 250, 260, 270, 280, 290
B) 0, 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800
C) 200, 250, 300, 350, 400, 450, 500, 550, 600, 650
D) 200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000

Determine whether the first number is divisible by the second number.

- 22) 90; 9
A) Yes
B) No

- 23) 27; 6
A) Yes
B) No

- 24) 475; 5
A) Yes
B) No

- 25) 433; 6
A) Yes B) No 25) _____
- 26) 210; 15
A) Yes B) No 26) _____
- 27) 303; 13
A) Yes B) No 27) _____
- 28) 6840; 9
A) Yes B) No 28) _____
- 29) 1563; 6
A) Yes B) No 29) _____
- 30) 3990; 19
A) Yes B) No 30) _____
- 31) 7784; 26
A) Yes B) No 31) _____

Determine whether the number is prime, composite, or neither.

- 32) 1
A) Composite B) Prime C) Neither 32) _____
- 33) 19
A) Composite B) Prime C) Neither 33) _____
- 34) 8
A) Prime B) Neither C) Composite 34) _____
- 35) 23
A) Composite B) Prime C) Neither 35) _____
- 36) 81
A) Neither B) Prime C) Composite 36) _____

Find the prime factorization of the number.

- 37) 10
A) $2 \cdot 6$ B) $2 \cdot 5$ C) $2 \cdot 7$ D) $2 + 5$ 37) _____
- 38) 22
A) $2 \cdot 2 \cdot 2$ B) $2 \cdot 2 \cdot 5$ C) $2 \cdot 12$ D) $2 \cdot 11$ 38) _____
- 39) 20
A) $4 \cdot 5$ B) $2 \cdot 2 \cdot 5$ C) $5 \cdot 5$ D) $4 \cdot 2$ 39) _____
- 40) 105
A) $5 \cdot 5 \cdot 3$ B) $3 \cdot 5 \cdot 7$ C) $15 \cdot 7$ D) $3 \cdot 3 \cdot 7$ 40) _____

- 41) 122
 A) $2 \cdot 59$ B) $2 \cdot 2 \cdot 61$ C) $2 \cdot 2$ D) $2 \cdot 61$ 41) _____
- 42) 198
 A) $22 \cdot 3 \cdot 3$ B) $2 \cdot 3 \cdot 3 \cdot 11$ C) $2 \cdot 3 \cdot 11$ D) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 11$ 42) _____
- 43) 108
 A) $2 \cdot 2 \cdot 3 \cdot 3$ B) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 5$
 C) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 3$ D) $2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 3$ 43) _____
- 44) 465
 A) $3 \cdot 5 \cdot 31$ B) $15 \cdot 31$ C) $3 \cdot 3 \cdot 31$ D) $5 \cdot 5 \cdot 31$ 44) _____

Determine whether the number is divisible by 2, 3, 4, 5, 6, 8, 9, and/or 10.

- 45) 40
 A) 2, 4, 5, 10 B) 2, 4, 5 C) 2, 4, 5, 8 D) 2, 4, 5, 8, 10 45) _____
- 46) 13,400
 A) 2, 5, 4, 8, 10 B) 2, 4, 5, 8 C) 2, 4, 5 D) 2, 5, 8, 10 46) _____
- 47) 71
 A) 3, 9 B) 3 C) 3, 5 D) None 47) _____
- 48) 713
 A) 3 B) None C) 3, 9 D) 3, 5 48) _____
- 49) 16,031
 A) 3, 5 B) None C) 3 D) 5 49) _____
- 50) 2378
 A) 2 B) 2, 3, 4 C) 4 D) 3, 4 50) _____
- 51) 2706
 A) 2, 3, 4 B) 2, 3, 6 C) 4, 5, 6 D) 3, 4, 6 51) _____
- 52) 9455
 A) 10 B) 2, 5, 10 C) 5, 10 D) 5 52) _____
- 53) 2523
 A) 9 B) 3 C) 2, 3, 9 D) 3, 9 53) _____
- 54) 15,340
 A) 4, 5 B) 2, 4, 5, 10 C) 2, 5 D) 4, 5, 10 54) _____

Identify the numerator and denominator.

55) $\frac{7}{4}$

55) _____

A) Numerator: 4
Denominator: 7

B) Numerator: 11
Denominator: 1

C) Numerator: $\frac{4}{7}$
Denominator: 7

D) Numerator: 7
Denominator: 4

56) $\frac{13}{2}$

56) _____

A) Numerator: 1
Denominator: $\frac{2}{13}$

B) Numerator: 2
Denominator: 13

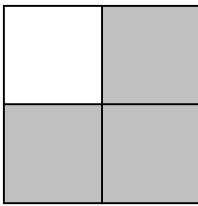
C) Numerator: $\frac{13}{2}$
Denominator: 1

D) Numerator: 13
Denominator: 2

What part of the object or set of objects is shaded?

57)

57) _____



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

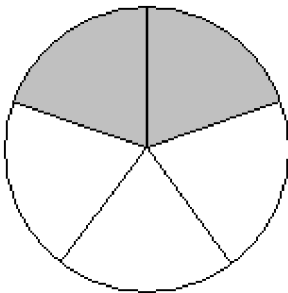
B) $\frac{3}{4}$

C) $\frac{1}{4}$

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

58)

58) _____



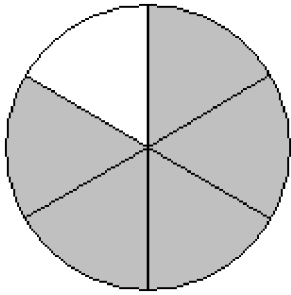
A) $\frac{2}{3}$

B) $\frac{5}{2}$

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

D) $\frac{2}{5}$

59)



A) $\frac{1}{6}$

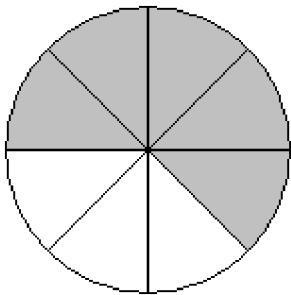
B) $\frac{1}{5}$

C) $\frac{5}{6}$

D) $\frac{5}{1}$

59) _____

60)



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

B) $\frac{3}{8}$

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

D) $\frac{5}{8}$

60) _____

61)



A) $\frac{3}{8}$

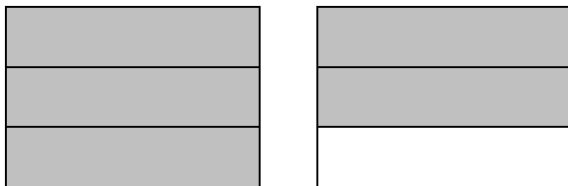
B) $\frac{3}{5}$

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

D) $\frac{5}{8}$

61) _____

62)



A) $\frac{1}{5}$

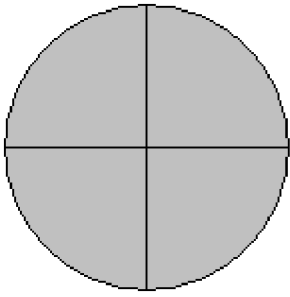
B) $\frac{5}{3}$

C) $\frac{5}{1}$

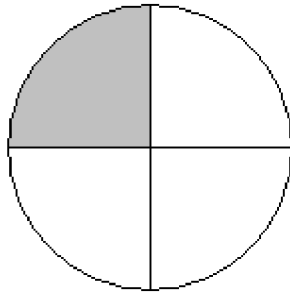
D) $\frac{5}{6}$

62) _____

63)



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



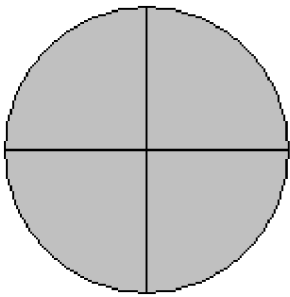
B) $\frac{5}{8}$

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

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

63) _____

64)



A) $\frac{7}{8}$

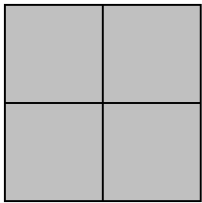
B) $\frac{3}{4}$

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

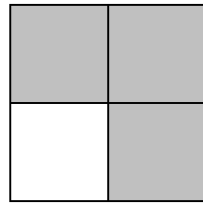
D) $\frac{7}{4}$

64) _____

65)



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



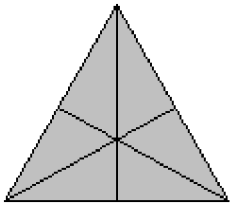
B) $\frac{7}{8}$

C) $\frac{7}{4}$

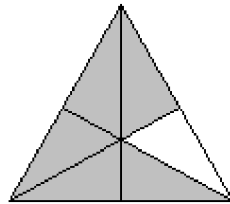
D) $\frac{1}{7}$

65) _____

66)



A) $\frac{11}{12}$



B) $\frac{11}{6}$

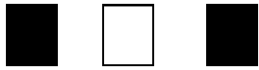
C) $\frac{11}{1}$

D) $\frac{1}{11}$

66) _____

What part of the set of objects is shaded?

67)



A) $\frac{4}{3}$

B) $\frac{4}{7}$

C) $\frac{7}{3}$

D) $\frac{3}{7}$

67) _____

68)



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

B) $\frac{3}{4}$

C) $\frac{7}{4}$

D) $\frac{3}{7}$

68) _____

69)



A) $\frac{2}{6}$

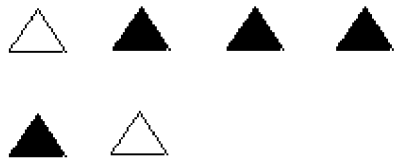
B) $\frac{2}{4}$

C) $\frac{6}{4}$

D) $\frac{4}{6}$

69) _____

70)



A) $\frac{4}{2}$

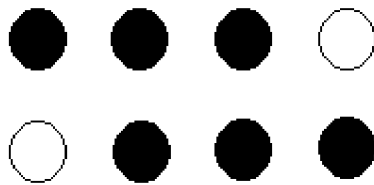
B) $\frac{6}{2}$

C) $\frac{2}{6}$

D) $\frac{4}{6}$

70) _____

71)



A) $\frac{8}{6}$

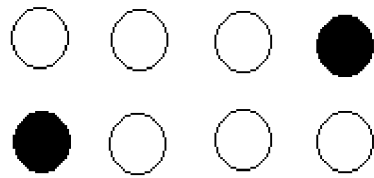
B) $\frac{2}{8}$

C) $\frac{6}{2}$

D) $\frac{6}{8}$

71) _____

72)



A) $\frac{2}{6}$

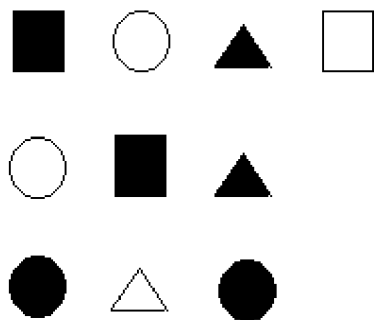
B) $\frac{8}{2}$

C) $\frac{2}{8}$

D) $\frac{6}{8}$

72) _____

73)



A) $\frac{4}{6}$

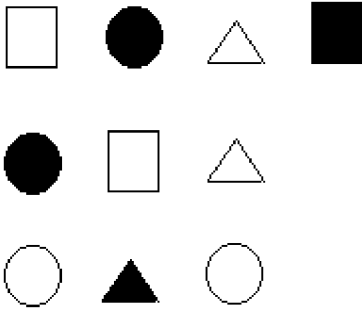
B) $\frac{4}{10}$

C) $\frac{6}{4}$

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

73) _____

74)



A) $\frac{4}{6}$

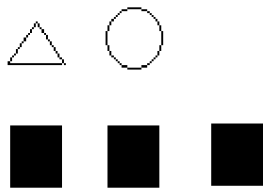
B) $\frac{6}{10}$

C) $\frac{6}{4}$

D) $\frac{4}{10}$

74) _____

75)



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

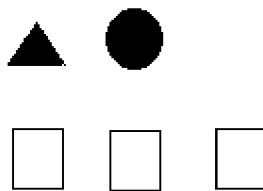
B) $\frac{3}{5}$

C) $\frac{2}{5}$

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

75) _____

76)



A) $\frac{2}{5}$

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

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

D) $\frac{5}{2}$

76) _____

Provide an appropriate response.

77) There are 6 women and 3 men on a committee. What is the ratio of the number of women to the total number of people on the committee?

77) _____

A) $\frac{6}{3}$

B) $\frac{3}{6}$

C) $\frac{3}{9}$

D) $\frac{6}{9}$

78) There are 7 women and 3 men on a committee. What is the ratio of the number of men to the total number of people on the committee?

78) _____

A) $\frac{3}{10}$

B) $\frac{7}{3}$

C) $\frac{3}{7}$

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

79) There are 7 women and 8 men on a committee. What is the ratio of the women to men? 79) _____
 A) $\frac{8}{7}$ B) $\frac{7}{15}$ C) $\frac{8}{15}$ D) $\frac{7}{8}$

80) There are 10 women and 6 men on a committee. What is the ratio of the men to women? 80) _____
 A) $\frac{6}{10}$ B) $\frac{6}{16}$ C) $\frac{10}{16}$ D) $\frac{10}{6}$

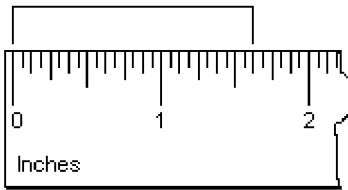
81) There are 11 people on a committee, and 2 of them are women. What is the ratio of the number of women to the total number of people on the committee? 81) _____
 A) $\frac{9}{11}$ B) $\frac{2}{11}$ C) $\frac{2}{9}$ D) $\frac{9}{2}$

82) There are 13 people on a committee, and 7 of them are women. What is the ratio of the number of men to the total number of people on the committee? 82) _____
 A) $\frac{7}{6}$ B) $\frac{7}{13}$ C) $\frac{6}{7}$ D) $\frac{6}{13}$

83) There are 5 people on a committee, and 3 of them are women. What is the ratio of the number of women to the number of men on the committee? 83) _____
 A) $\frac{3}{2}$ B) $\frac{2}{5}$ C) $\frac{2}{3}$ D) $\frac{3}{5}$

84) There are 14 people on a committee, and 5 of them are women. What is the ratio of the number of men to the number of women on the committee? 84) _____
 A) $\frac{9}{14}$ B) $\frac{9}{5}$ C) $\frac{5}{9}$ D) $\frac{5}{14}$

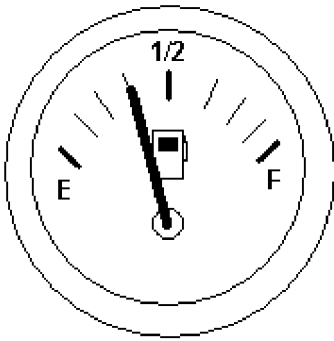
85) What part of an inch is highlighted? 85) _____



A) $\frac{26}{32}$ B) $\frac{16}{26}$ C) $\frac{26}{16}$ D) $\frac{32}{26}$

86) Give fraction notation for the amount of gas (a) in the tank and (b) used from a full tank.

86) _____



A) (a) $\frac{6}{10}$; (b) $\frac{4}{10}$


B) (a) $\frac{5}{8}$; (b) $\frac{3}{8}$

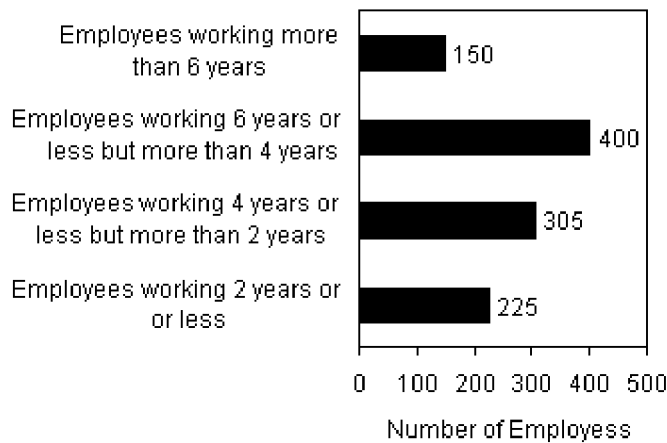
C) (a) $\frac{3}{8}$; (b) $\frac{5}{8}$

D) (a) $\frac{4}{10}$; (b) $\frac{6}{10}$

87) A company with 1080 total employees prepares the following analysis for the length of time its employees have been with the company. Use the table to answer the question.

87) _____

Analysis of the number of years employees have been with their current employer 



What is the ratio of the number of employees working 4 years or less but more than 2 years to the number of employees working 2 years or less?

A) $\frac{1080}{305}$

B) $\frac{225}{305}$

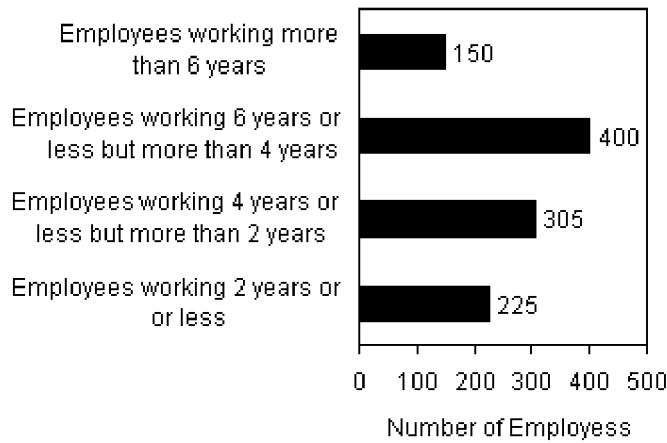
C) $\frac{305}{1080}$

D) $\frac{305}{225}$

88) A company with 1080 total employees prepares the following analysis for the length of time its employees have been with the company. Use the table to answer the question.

88) _____

Analysis of the number of years employees have been with their current employer



What is the ratio of the number of employees working more than 6 years to the total number of employees?

A) $\frac{150}{1080}$

B) $\frac{1080}{225}$

C) $\frac{1080}{150}$

D) $\frac{225}{1080}$

Simplify.

89) $\frac{0}{8}$

89) _____

A) Not defined

B) 1

C) 8

D) 0

90) $\frac{0}{542}$

90) _____

A) 1

B) Not defined

C) 542

D) 0

91) $\frac{15}{0}$

91) _____

A) 15

B) 0

C) Not defined

D) $\frac{1}{15}$

92) $\frac{525}{0}$

92) _____

A) Not defined

B) 0

C) $\frac{1}{525}$

D) 525

93) $\frac{9}{9}$

93) _____

A) 9

B) 0

C) 1

D) Not defined

94) $\frac{75}{75}$ 94) _____
 A) Not defined B) 75 C) 1 D) 0

95) $\frac{29}{1}$ 95) _____
 A) Not defined B) 1 C) 0 D) 29

96) $\frac{208}{1}$ 96) _____
 A) 0 B) 1 C) Not defined D) 208

97) $\frac{19 - 19}{264}$ 97) _____
 A) 19 B) 0 C) Not defined D) $\frac{1}{264}$

98) $\frac{40}{79 - 79}$ 98) _____
 A) 40 B) 0 C) $\frac{40}{79}$ D) Not defined

Multiply.

99) $\frac{1}{9} \cdot \frac{1}{4}$ 99) _____
 A) $\frac{1}{13}$ B) $\frac{2}{13}$ C) $\frac{1}{36}$ D) $\frac{2}{36}$

100) $\frac{1}{4} \times \frac{1}{10}$ 100) _____
 A) $\frac{2}{40}$ B) $\frac{1}{40}$ C) $\frac{1}{14}$ D) $\frac{2}{14}$

101) $\frac{2}{7} \cdot \frac{1}{5}$ 101) _____
 A) $\frac{1}{35}$ B) $\frac{2}{12}$ C) $\frac{3}{12}$ D) $\frac{2}{35}$

102) $\frac{1}{15} \times \frac{2}{15}$ 102) _____
 A) $\frac{4}{225}$ B) $\frac{2}{225}$ C) $\frac{3}{30}$ D) $\frac{2}{30}$

- 103) $\frac{4}{7} \cdot \frac{4}{9}$ 103) _____
 A) $\frac{8}{16}$ B) $\frac{4}{63}$ C) $\frac{16}{63}$ D) $\frac{1}{63}$
- 104) $\frac{11}{12} \cdot \frac{11}{12}$ 104) _____
 A) $\frac{121}{12}$ B) 1 C) $\frac{22}{24}$ D) $\frac{121}{144}$
- 105) $\frac{2}{5} \cdot \frac{7}{9}$ 105) _____
 A) $\frac{9}{45}$ B) $\frac{9}{14}$ C) $\frac{14}{35}$ D) $\frac{14}{45}$
- 106) $\frac{3}{8} \times \frac{5}{7}$ 106) _____
 A) $\frac{8}{15}$ B) $\frac{15}{40}$ C) $\frac{15}{56}$ D) $\frac{8}{56}$
- 107) $\frac{5}{47} \cdot \frac{4}{59}$ 107) _____
 A) $\frac{20}{110}$ B) $\frac{52}{1000}$ C) $\frac{52}{110}$ D) $\frac{20}{2773}$
- 108) $\frac{13}{16} \cdot \frac{17}{23}$ 108) _____
 A) $\frac{30}{39}$ B) $\frac{221}{39}$ C) $\frac{30}{368}$ D) $\frac{221}{368}$
- 109) $2 \cdot \frac{1}{5}$ 109) _____
 A) $\frac{2}{5}$ B) $\frac{1}{10}$ C) $\frac{2}{10}$ D) $\frac{3}{5}$
- 110) $\frac{1}{7} \times 3$ 110) _____
 A) $\frac{4}{7}$ B) $\frac{1}{21}$ C) $\frac{3}{21}$ D) $\frac{3}{7}$
- 111) $\frac{3}{5} \cdot 1$ 111) _____
 A) 1 B) $\frac{4}{5}$ C) $\frac{3}{5}$ D) $\frac{4}{6}$

112) $1 \times \frac{2}{3}$ 112) _____
A) $\frac{3}{4}$ B) $\frac{3}{3}$ C) $\frac{2}{3}$ D) 1

113) $\frac{5}{7} \cdot 3$ 113) _____
A) $\frac{15}{7}$ B) $\frac{15}{21}$ C) $\frac{8}{7}$ D) $\frac{5}{21}$

114) $4 \cdot \frac{2}{7}$ 114) _____
A) $\frac{8}{28}$ B) $\frac{6}{7}$ C) $\frac{8}{7}$ D) $\frac{2}{28}$

115) $\frac{5}{9} \cdot 40$ 115) _____
A) $\frac{45}{9}$ B) $\frac{200}{9}$ C) $\frac{200}{360}$ D) $\frac{5}{360}$

116) $23 \times \frac{2}{9}$ 116) _____
A) $\frac{46}{207}$ B) $\frac{2}{207}$ C) $\frac{46}{9}$ D) $\frac{25}{9}$

117) $\frac{4}{9} \cdot 20$ 117) _____
A) $\frac{24}{9}$ B) $\frac{4}{180}$ C) $\frac{80}{180}$ D) $\frac{80}{9}$

Solve.

118) A rectangular sheet of paper measures $\frac{1}{7}$ ft by $\frac{2}{3}$ ft. What is its area? 118) _____
A) $\frac{3}{21}$ ft² B) $\frac{3}{10}$ ft² C) $\frac{3}{3}$ ft² D) $\frac{2}{21}$ ft²

119) Each piece of pizza is $\frac{1}{10}$ of the pizza. What fraction of the pizza is $\frac{1}{2}$ of a piece? 119) _____
A) $\frac{2}{12}$ B) $\frac{1}{20}$ C) $\frac{2}{20}$ D) $\frac{1}{12}$

120) One of 17 initial applicants for a certain job will receive a first interview. Of those who receive a first interview, one of 12 will receive a second interview. What fraction of initial applicants will receive a second interview? 120) _____

A) $\frac{1}{204}$ B) $\frac{2}{29}$ C) $\frac{2}{204}$ D) $\frac{1}{29}$

121) Greg's water bottle can hold $\frac{5}{7}$ L. When he starts on his bicycle race, his water bottle is $\frac{1}{3}$ full. How much water does he have? 121) _____

A) $\frac{6}{10}$ L B) $\frac{6}{3}$ L C) $\frac{5}{10}$ L D) $\frac{5}{21}$ L

122) $\frac{1}{5}$ of Mary's earned income is deducted from her paycheck for withholdings. $\frac{3}{4}$ of the withholdings are for taxes. What fraction of Mary's earned income is deducted for taxes? 122) _____

A) $\frac{4}{9}$ B) $\frac{3}{20}$ C) $\frac{1}{5}$ D) $\frac{4}{15}$

123) It takes $\frac{3}{3}$ lb of flour to make a cake. How much flour is needed to make 4 cakes? 123) _____

A) $\frac{7}{3}$ lb B) $\frac{12}{12}$ lb C) $\frac{12}{3}$ lb D) $\frac{3}{12}$ lb

124) Julia preheated her oven for 21 minutes. What fraction of an hour was this? (1 hour = 60 min) 124) _____

A) $\frac{60}{21}$ hr B) $\frac{21}{26}$ hr C) $\frac{20}{60}$ hr D) $\frac{21}{60}$ hr

125) Mr. Rivera opened a package of 75 drinking cups for his restaurant. During the day, 2 cups were used. What fraction of the package of cups was used? 125) _____

A) $\frac{75}{2}$ of the package B) $\frac{73}{3}$ of the package
 C) $\frac{2}{73}$ of the package D) $\frac{2}{75}$ of the package

Find another name for the given number, but with the denominator indicated.

126) $\frac{2}{7} = \frac{?}{21}$ 126) _____

A) $\frac{8}{21}$ B) $\frac{14}{21}$ C) $\frac{5}{21}$ D) $\frac{6}{21}$

127) $\frac{4}{14} = \frac{?}{84}$ 127) _____

A) $\frac{24}{84}$ B) $\frac{56}{84}$ C) $\frac{4}{84}$ D) $\frac{336}{1176}$

128) $\frac{12}{8} = \frac{?}{16}$ 128) _____
A) $\frac{192}{128}$ B) $\frac{96}{16}$ C) $\frac{12}{16}$ D) $\frac{24}{16}$

129) $\frac{11}{18} = \frac{?}{324}$ 129) _____
A) $\frac{198}{324}$ B) $\frac{121}{324}$ C) $\frac{11}{324}$ D) $\frac{29}{324}$

130) $\frac{7}{24} = \frac{?}{144}$ 130) _____
A) $\frac{13}{144}$ B) $\frac{42}{144}$ C) $\frac{7}{144}$ D) $\frac{168}{144}$

Simplify.

131) $\frac{6}{9}$ 131) _____
A) $\frac{2}{9}$ B) $\frac{3}{2}$ C) $\frac{2}{3}$ D) $\frac{6}{3}$

132) $\frac{2}{12}$ 132) _____
A) $\frac{2}{7}$ B) $\frac{1}{6}$ C) $\frac{1}{12}$ D) $\frac{2}{12}$

133) $\frac{24}{4}$ 133) _____
A) $\frac{6}{4}$ B) $\frac{1}{6}$ C) 6 D) $\frac{12}{2}$

134) $\frac{30}{10}$ 134) _____
A) $\frac{1}{3}$ B) $\frac{3}{10}$ C) $\frac{6}{2}$ D) 3

135) $\frac{35}{63}$ 135) _____
A) $\frac{7}{9}$ B) $\frac{5}{9}$ C) $\frac{5}{7}$ D) $\frac{35}{63}$

136) $\frac{70}{80}$ 136) _____
A) $\frac{7}{10}$ B) $\frac{10}{8}$ C) $\frac{7}{8}$ D) $\frac{70}{80}$

137) $\frac{30}{40}$ 137) _____
 A) $\frac{3}{10}$ B) $\frac{3}{4}$ C) $\frac{30}{40}$ D) $\frac{10}{4}$

138) $\frac{30}{50}$ 138) _____
 A) $\frac{3}{10}$ B) $\frac{3}{5}$ C) $\frac{30}{50}$ D) $\frac{10}{5}$

139) $\frac{60}{64}$ 139) _____
 A) $\frac{4}{16}$ B) $\frac{15}{16}$ C) $\frac{60}{64}$ D) $\frac{15}{4}$

140) $\frac{464}{1057}$ 140) _____
 A) $\frac{352}{154}$ B) $\frac{464}{1057}$ C) $\frac{22}{151}$ D) $\frac{154}{352}$

Use = or \neq for \square to write a true sentence.

141) $\frac{1}{3} \square \frac{2}{6}$ 141) _____
 A) \neq B) =

142) $\frac{1}{2} \square \frac{3}{7}$ 142) _____
 A) = B) \neq

143) $\frac{4}{5} \square \frac{12}{15}$ 143) _____
 A) = B) \neq

144) $\frac{3}{6} \square \frac{9}{17}$ 144) _____
 A) \neq B) =

145) $\frac{4}{3} \square \frac{11}{9}$ 145) _____
 A) = B) \neq

146) $\frac{70}{100} \square \frac{700}{1000}$ 146) _____
 A) = B) \neq

147) $\frac{20}{100} \square \frac{230}{1000}$

A) =

B) \neq

147) _____

148) $\frac{2}{6} \square \frac{6}{18}$

A) =

B) \neq

148) _____

149) $\frac{132}{242} \square \frac{102}{187}$

A) \neq

B) =

149) _____

150) $\frac{35}{10} \square \frac{350}{1000}$

A) =

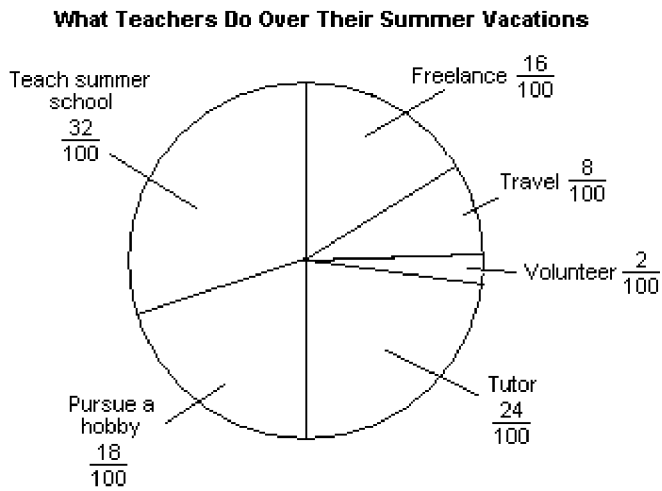
B) \neq

150) _____

Use the circle graph to answer the question.

151) What do teachers do during their summer vacations? The responses of 100 teachers are organized in the circle graph below. Simplify the fraction representing the number of teachers who volunteer.

151) _____



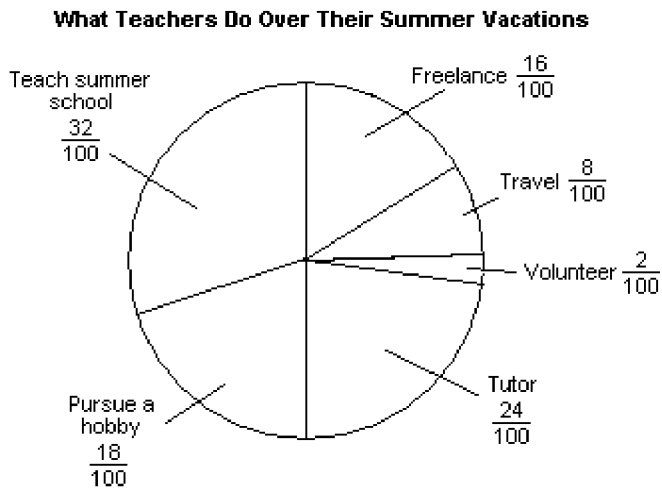
A) $\frac{3}{50}$

B) $\frac{1}{100}$

C) $\frac{1}{25}$

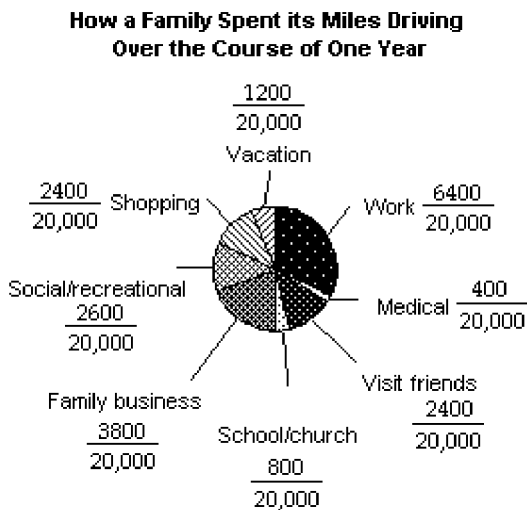
D) $\frac{1}{50}$

- 152) What do teachers do during their summer vacations? The responses of 100 teachers are organized in the circle graph below. Simplify the fraction representing the number of teachers who teach summer school. 152) _____



- A) $\frac{19}{50}$ B) $\frac{7}{25}$ C) $\frac{8}{25}$ D) $\frac{3}{10}$

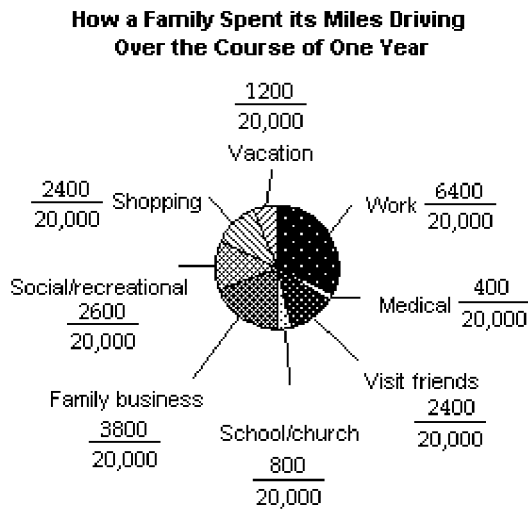
- 153) How did a family spend a total of 20,000 miles driving to different locations for various purposes over the course of one year? Simplify the fraction representing the number of Social/recreational miles driven. 153) _____



- A) $\frac{13}{100}$ B) $\frac{3}{50}$ C) $\frac{8}{25}$ D) $\frac{3}{25}$

154) How did a family spend a total of 20,000 miles driving to different locations for various purposes over the course of one year? Simplify the fraction representing the number of Vacation miles driven.

154) _____



A) $\frac{3}{25}$

B) $\frac{1}{50}$

C) $\frac{8}{25}$

D) $\frac{3}{50}$

Multiply and simplify.

155) $\frac{4}{7} \cdot \frac{1}{4}$

155) _____

A) $\frac{4}{11}$

B) $\frac{1}{7}$

C) $\frac{4}{28}$

D) $\frac{5}{11}$

156) $\frac{1}{6} \cdot \frac{3}{8}$

156) _____

A) $\frac{1}{16}$

B) $\frac{3}{11}$

C) $\frac{2}{7}$

D) $\frac{3}{48}$

157) $\frac{15}{20} \cdot \frac{1}{20}$

157) _____

A) 15

B) $\frac{2}{5}$

C) $\frac{3}{80}$

D) $\frac{3}{1280}$

158) $\frac{19}{5} \cdot \frac{15}{14}$

158) _____

A) $\frac{34}{19}$

B) $\frac{285}{70}$

C) $\frac{57}{14}$

D) $\frac{14}{15}$

159) $\frac{12}{5} \cdot \frac{15}{14}$

159) _____

A) $\frac{18}{7}$

B) $\frac{27}{19}$

C) $\frac{180}{70}$

D) $\frac{14}{15}$

160) $\frac{6}{8} \cdot \frac{4}{2}$ 160) _____
A) $\frac{24}{16}$ B) 3 C) $\frac{3}{2}$ D) $\frac{5}{6}$

161) $\frac{3}{10} \cdot \frac{5}{10}$ 161) _____
A) $\frac{2}{5}$ B) $\frac{3}{4}$ C) $\frac{3}{20}$ D) $\frac{3}{5}$

162) $\frac{5}{10} \cdot \frac{30}{160}$ 162) _____
A) $\frac{7}{320}$ B) $\frac{3}{32}$ C) $\frac{150}{1600}$ D) $\frac{7}{34}$

163) $\frac{15}{21} \cdot \frac{3}{9}$ 163) _____
A) $\frac{9}{17}$ B) $\frac{5}{21}$ C) $\frac{2}{21}$ D) $\frac{45}{189}$

164) $\frac{11}{10} \cdot \frac{10}{11}$ 164) _____
A) 0 B) $\frac{100}{121}$ C) $\frac{121}{100}$ D) 1

165) $12 \cdot \frac{1}{12}$ 165) _____
A) 1 B) $\frac{1}{144}$ C) $\frac{12}{144}$ D) 144

166) $12 \cdot \frac{1}{2}$ 166) _____
A) $\frac{12}{24}$ B) 24 C) $\frac{1}{24}$ D) 6

167) $72 \cdot \frac{3}{8}$ 167) _____
A) $\frac{216}{8}$ B) 27 C) $\frac{1729}{80}$ D) 24

168) $12 \cdot \frac{3}{5}$ 168) _____
A) $\frac{36}{5}$ B) $\frac{36}{60}$ C) 60 D) $\frac{3}{60}$

169) $\frac{1}{6} \cdot 10$ 169) _____
 A) $\frac{10}{10}$ B) $\frac{10}{60}$ C) $\frac{1}{60}$ D) $\frac{5}{3}$

170) $\frac{1}{4} \cdot 80$ 170) _____
 A) 2 B) $\frac{80}{4}$ C) 20 D) $\frac{80}{320}$

171) $\frac{4}{5} \cdot 400$ 171) _____
 A) 320 B) $\frac{160004}{5}$ C) 280 D) $\frac{1600}{5}$

Solve.

172) There are 35 students in Jose's class. $\frac{1}{5}$ of the students are science majors. How many students are science majors? 172) _____
 A) 5 students B) 28 students C) 7 students D) 35 students

173) Tyler and his sister arranged a party for their father's birthday. The total cost of the party was \$900. Tyler paid $\frac{3}{4}$ of the total cost and his sister paid the remainder. How much did Tyler pay? 173) _____
 A) \$690 B) \$695 C) \$675 D) \$685

174) When Maria finished medical school she owed \$51,000 in student loans. She repaid $\frac{1}{5}$ of the total amount within two years of graduating. How much did she repay within two years of graduating? 174) _____
 A) \$1020 B) \$11,220 C) \$10,200 D) \$9180

175) A storehouse stores 590 different inventory items. $\frac{3}{10}$ of these items are perishable. How many of the inventory items are perishable? 175) _____
 A) 174 items B) 59 items C) 180 items D) 177 items

176) A restaurant has a capacity of 90 patrons. If the restaurant is $\frac{8}{10}$ full, how many patrons are at the restaurant? 176) _____
 A) 9 patrons B) 64 patrons C) 80 patrons D) 72 patrons

177) A recipe calls for $\frac{2}{3}$ cup of milk. How much milk should be used to make $\frac{1}{6}$ of the recipe? 177) _____
 A) $\frac{1}{18}$ cup B) $\frac{1}{9}$ cup C) $\frac{2}{9}$ cup D) $\frac{3}{18}$ cup

178) On a map, 1 in. represents 600 miles. How much does $\frac{3}{4}$ in. represent? 178) _____
A) 460 mi B) 450 mi C) 800 mi D) 440 mi

179) A company has 12,600 employees. Of these, $\frac{1}{4}$ drive alone to work, $\frac{1}{6}$ car pool, $\frac{1}{8}$ use public transportation, $\frac{1}{9}$ cycle, and the remainder use other methods of transportation. How many employees use each method of transportation? 179) _____
A) Drive alone: 3150; car pool: 2100; public transportation: 1575; cycle: 1400; other: 4375
B) Drive alone: 3150; car pool: 2100; public transportation: 1575; cycle: 1400; other: 1400
C) Drive alone: 3250; car pool: 2100; public transportation: 1475; cycle: 1400; other: 1000
D) Drive alone: 315; car pool: 2100; public transportation: 1575; cycle: 1400; other: 4375

180) The pitch of a screw is the distance between threads. With each complete rotation of the screw, it goes in or out a distance equal to its pitch. How far will a screw with a pitch of $\frac{2}{45}$ in. go into a piece of wood when it is turned 10 complete rotations clockwise? 180) _____
A) $\frac{4}{9}$ in. B) $\frac{1}{9}$ in. C) $\frac{9}{4}$ in. D) $\frac{1}{225}$ in.

Find the reciprocal.

181) $\frac{4}{5}$ 181) _____
A) $\frac{5}{1}$ B) $\frac{5}{4}$ C) 5 D) $\frac{1}{4}$

182) 3 182) _____
A) 3 B) $\frac{3}{1}$ C) 1 D) $\frac{1}{3}$

183) 13 183) _____
A) $\frac{13}{1}$ B) $\frac{1}{13}$ C) 13 D) 1

184) $\frac{1}{7}$ 184) _____
A) $\frac{1}{7}$ B) 0 C) 1 D) 7

185) $\frac{1}{18}$ 185) _____
A) $\frac{1}{18}$ B) 0 C) 18 D) 1

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

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

B) 3

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

D) $\frac{1}{5}$

186) _____

Divide and simplify.

187) $\frac{3}{4} \div \frac{7}{8}$

A) $\frac{6}{7}$

B) $\frac{32}{21}$

C) $\frac{7}{6}$

D) $\frac{21}{32}$

187) _____

188) $\frac{6}{7} \div \frac{6}{5}$

A) $\frac{7}{5}$

B) $\frac{5}{7}$

C) $\frac{35}{36}$

D) $\frac{36}{35}$

188) _____

189) $\frac{2}{3} \div \frac{1}{3}$

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

B) $\frac{2}{9}$

C) $\frac{9}{2}$

D) 2

189) _____

190) $\frac{5}{8} \div 3$

A) $\frac{5}{24}$

B) $\frac{5}{8}$

C) None of these

D) $\frac{5}{11}$

190) _____

191) $\frac{16}{5} \div 2$

A) $\frac{8}{5}$

B) $\frac{32}{5}$

C) $\frac{5}{8}$

D) 8

191) _____

192) $15 \div \frac{3}{7}$

A) $\frac{45}{7}$

B) 5

C) 35

D) $\frac{1}{35}$

192) _____

193) $28 \div \frac{4}{3}$

A) $\frac{1}{21}$

B) $\frac{112}{3}$

C) 7

D) 21

193) _____

194) $\frac{5}{12} \div \frac{35}{72}$

A) $\frac{175}{864}$

B) $\frac{7}{6}$

C) $\frac{6}{7}$

D) $\frac{30}{7}$

194) _____

Solve and simplify.

195) $\frac{5}{8} \cdot t = 95$

A) 152

B) 238

C) 95

D) 27

195) _____

196) $\frac{9}{7} \cdot x = 135$

A) 22

B) 135

C) 105

D) 174

196) _____

197) $\frac{7}{5} \cdot y = \frac{49}{5}$

A) 35

B) $\frac{1}{7}$

C) 7

D) $\frac{343}{25}$

197) _____

198) $\frac{5}{8} \cdot n = \frac{15}{4}$

A) $\frac{1}{6}$

B) 3

C) 6

D) $\frac{75}{32}$

198) _____

199) $\frac{3}{4} \cdot x = \frac{3}{5}$

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

B) $\frac{9}{100}$

C) $\frac{5}{6}$

D) $\frac{60}{12}$

199) _____

200) $\frac{3}{4} \cdot t = 48$

A) 20

B) 64

C) 72

D) 48

200) _____

201) $\frac{5}{4} \cdot x = 60$

A) 60

B) 16

C) 75

D) 48

201) _____

202) $k \cdot \frac{9}{32} = \frac{3}{24}$

A) $\frac{96}{216}$

B) $\frac{9}{1024}$

C) $\frac{3}{4}$

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

202) _____

203) $x \cdot \frac{4}{21} = \frac{6}{35}$

A) $\frac{126}{140}$

B) $\frac{8}{245}$

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

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

203) _____

Solve.

- 204) A land developer wants to develop 8 acres of land. Each lot in the development is to be $\frac{4}{11}$ of an acre. How many lots will the land developer have in the 8 acres? 204) _____
A) $5\frac{1}{2}$ lots B) $\frac{32}{11}$ lot(s) C) 22 lots D) $\frac{2}{11}$ lot
- 205) A box of cereal contains about 12 cups. A serving size is $\frac{3}{4}$ cup. About how many servings are in the box of cereal? 205) _____
A) 16 servings B) 8 servings C) $3\frac{3}{4}$ servings D) 9 servings
- 206) A child's dose of medicine is $\frac{1}{6}$ of a pre-measured dose cup. If the bottle of medicine is the size of 5 dose cups, how many children's doses are there in the bottle? 206) _____
A) $5\frac{1}{6}$ doses B) 30 doses C) $\frac{5}{6}$ dose(s) D) 11 doses
- 207) Jeremy has traveled $\frac{4}{5}$ of his total trip. He has traveled 432 miles so far. How many more miles does he have to travel? 207) _____
A) None of these B) 540 miles C) 108 miles D) $86\frac{2}{5}$ miles
- 208) Darren has traveled $\frac{7}{8}$ of his total trip. He has traveled 21 miles so far. How many more miles does he have to travel? 208) _____
A) None of these B) 24 miles C) $2\frac{5}{8}$ miles D) 3 miles
- 209) A statistician has readings that take $\frac{1}{3}$ minute each to read and record. How many readings can be completed in 15 minutes? 209) _____
A) 16 readings B) 6 readings C) 5 readings D) 45 readings
- 210) A bag of chips is 24 ounces. A serving size is $\frac{3}{4}$ ounce. How many servings are in the bag of chips? 210) _____
A) $6\frac{3}{4}$ servings B) 18 servings C) $9\frac{1}{3}$ servings D) 32 servings
- 211) A piece of cheese weighing $\frac{2}{5}$ lb is to be divided into 10 equal portions. What will be the weight of each portion? 211) _____
A) 1 lb B) 25 lb C) $\frac{1}{25}$ lb D) 4 lb

- 212) A piece of cable which is $\frac{2}{5}$ m long is to be cut into pieces $\frac{1}{20}$ m long. How many pieces will there be? 212) _____
- A) 100 pieces B) $\frac{1}{8}$ piece C) 8 pieces D) 40 pieces

Provide an appropriate response.

- 213) The only consecutive whole numbers that are both prime numbers are _ and _ . 213) _____
- A) 6 and 7 B) 2 and 3 C) 0 and 1 D) 1 and 2

- 214) Fill in the blank with "always greater than," "sometimes greater than," "always less than, or "can not tell," whichever response is correct. When dividing a fraction by $\frac{3}{5}$, the answer is _ the fraction. 214) _____
- A) Sometimes greater than B) Cannot tell without knowing the fraction
C) Always less than D) Always greater than

- 215) Finish the statement with a correct response. To divide two fractions one needs to: 215) _____
- A) Invert the second fraction (divisor), add the numerators and multiply the denominators.
B) Add the numerators and multiply the denominators.
C) Invert the second fraction (divisor) and multiply.
D) Add the numerators and factor the denominators.

- 216) If a fraction simplifies to 1, what, if anything can you conclude about its numerator and denominator? 216) _____
- A) The numerator is smaller than the denominator.
B) The numerator and denominator are equal.
C) The numerator can be anything, the denominator is 1.
D) The numerator is 1, the denominator can be anything.

- 217) Y represents a positive whole number. Tell which of the quantities below is smallest and which is largest. 217) _____
- A: $Y \cdot \frac{1}{3}$
B: $Y \cdot \frac{1}{4}$
C: $Y \div \frac{1}{3}$
D: $Y \div \frac{1}{4}$
- A) Smallest: D; largest: B B) Smallest: D; largest: A
C) Smallest: A; largest: D D) Smallest: B; largest: D

- 218) If a fraction simplifies to 0, what, if anything can you conclude about its numerator? What, if anything, can you conclude about its denominator? 218) _____
- A) Numerator is 0, denominator is 0.
B) Numerator can be anything, denominator is 0.
C) Numerator is 0, denominator is not 0.
D) Numerator is 0, denominator is 1.

- 219) Which, if any, of the following statements are true? 219) _____
A: If a number is divisible by 9, it must be divisible by 3.
B: If a number is divisible by 3, it must be divisible by 9.
A) A true, B false B) A false, B true C) A true, B true D) A false, B false
- 220) The prime factorization of a number is $2 \cdot 2 \cdot 2 \cdot 2$. How many different factors does the number have, other than itself and one? Remember that the factors do not have to be prime. 220) _____
A) Two B) Four C) Three D) One

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

- 221) The prime factorization for the number X is $a \cdot b$ where a and b represent two different prime numbers. Is it possible that X could be a number larger than 1500? If not, explain why not. If it is possible, give an example of such a number and give its prime factorization. 221) _____
- 222) Do you agree with the following statement? "If the numerator of a fraction is prime and the denominator is not prime, the fraction cannot be simplified." If you agree with the statement, explain your thinking. If you do not agree with it, give an example of a fraction which can be simplified and whose numerator is prime and whose denominator is not prime. 222) _____

Answer Key

Testname: UNTITLED2

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

Answer Key

Testname: UNTITLED2

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

Answer Key

Testname: UNTITLED2

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

Answer Key

Testname: UNTITLED2

- 151) D
- 152) C
- 153) A
- 154) D
- 155) B
- 156) A
- 157) C
- 158) C
- 159) A
- 160) C
- 161) C
- 162) B
- 163) B
- 164) D
- 165) A
- 166) D
- 167) B
- 168) A
- 169) D
- 170) C
- 171) A
- 172) C
- 173) C
- 174) C
- 175) D
- 176) D
- 177) B
- 178) B
- 179) A
- 180) A
- 181) B
- 182) D
- 183) B
- 184) D
- 185) C
- 186) C
- 187) A
- 188) B
- 189) D
- 190) A
- 191) A
- 192) C
- 193) D
- 194) C
- 195) A
- 196) C
- 197) C
- 198) C
- 199) A
- 200) B

Answer Key

Testname: UNTITLED2

201) D

202) D

203) C

204) C

205) A

206) B

207) C

208) D

209) D

210) D

211) C

212) C

213) B

214) D

215) C

216) B

217) D

218) C

219) A

220) C

221) Answers will vary. Possible answer: Yes, X could be larger than 1500. One example is $1927 = 41 \cdot 47$.

222) Answers will vary. Possible answer: No, the statement is false since the denominator may be a multiple of the numerator. Possible counterexample: $\frac{7}{21}$.