Test Bank for Basic College Mathematics 13th Bittinger

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Exam

Name_____

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) 40; 40 1) _____
A) Yes B) No

2) 90; 15 2) _____
A) Yes B) No

3) 15; 60 3) _____
A) Yes B) No

4) 22; 19 4) _____
A) Yes B) No

5) 780; 140 5) _____
A) Yes B) No

Find all the factors of the number.

6) 30 6) _____
A) 1, 5, 6, 30 B) 1, 2, 3, 5, 6, 10, 20, 30
C) 1, 2, 3, 5, 6, 10, 15, 30 D) 5, 6, 10, 30

7) 28 7) _____
A) 1, 2, 7, 14, 28 B) 1, 2, 4, 7, 8, 14, 28
C) 1, 2, 4, 7, 14, 28 D) 2, 7, 14, 28

8) 36 8) _____
A) 1, 2, 4, 6, 12, 18, 36 B) 1, 2, 3, 4, 5, 6, 9, 10, 12, 18, 36
C) 2, 4, 6, 12, 18, 36 D) 1, 2, 3, 4, 6, 9, 12, 18, 36

9) 45 9) _____
A) 1, 3, 5, 9, 15, 45 B) 1, 3, 5, 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, 3, 4, 7, 8, 14, 18, 28, 56 B) 2, 4, 7, 8, 14, 28
C) 1, 2, 4, 7, 8, 14, 28, 56 D) 1, 2, 4, 7, 8, 14, 18, 28, 56

11) 63 11) _____
A) 1, 3, 7, 9, 21, 63 B) 1, 2, 3, 7, 9, 21, 36, 63
C) 3, 5, 7, 9, 11, 21, 63 D) 1, 3, 5, 7, 9, 11, 21, 63

12) 66 12) _____
A) 1, 2, 3, 4, 11, 16, 22, 33, 66 B) 1, 2, 3, 9, 11, 22, 33, 66
C) 1, 2, 3, 6, 11, 22, 33, 66 D) 1, 3, 11, 22, 33, 66

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13) 70 13) _____

A) 1, 3, 5, 7, 9, 15, 20, 35, 70
B) 1, 2, 5, 7, 10, 14, 35, 70
C) 1, 2, 5, 7, 35, 70
D) 1, 2, 3, 5, 7, 9, 15, 35, 70

14) 72 14) _____

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

15) 84 15) _____

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

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

16) 2 16) _____

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

17) 50 17) _____

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

18) 15 18) _____

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 19) _____

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

20) 27 20) _____

A) 27, 54, 81, 108, 135, 162, 189, 216, 243, 270
B) 27, 37, 47, 57, 67, 77, 87, 97, 107, 117
C) 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
D) 27, 29, 32, 36, 41, 47, 54, 62, 71, 81

21) 100 21) _____

A) 100, 150, 200, 250, 300, 350, 400, 450, 500, 550
B) 0, 100, 200, 300, 400, 500, 600, 700, 800, 900
C) 100, 110, 120, 130, 140, 150, 160, 170, 180, 190
D) 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000

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

22) 48; 8 22) _____

A) Yes
B) No

23) 85; 8 23) _____

A) Yes
B) No

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24) 837; 9 24) _____
A) Yes B) No

25) 403; 6 25) _____
A) Yes B) No

26) 442; 13 26) _____
A) Yes B) No

27) 387; 12 27) _____
A) Yes B) No

28) 2784; 4 28) _____
A) Yes B) No

29) 2397; 7 29) _____
A) Yes B) No

30) 5560; 20 30) _____
A) Yes B) No

31) 4924; 18 31) _____
A) Yes B) No

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

32) 1 32) _____
A) Neither B) Composite C) Prime

33) 19 33) _____
A) Composite B) Neither C) Prime

34) 10 34) _____
A) Prime B) Composite C) Neither

35) 31 35) _____
A) Prime B) Neither C) Composite

36) 36 36) _____
A) Neither B) Composite C) Prime

Find the prime factorization of the number.

37) 6 37) _____
A) 2 + 3 B) 2 · 4 C) 2 · 3 D) 2 · 5

38) 39 38) _____
A) 3 · 14 B) 3 · 3 · 5 C) 2 · 3 · 3 D) 3 · 13

39) 45 39) _____
A) 5 · 5 B) 9 · 3 C) 3 · 3 · 5 D) 9 · 5

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40) 105 40) _____
A) $3 \cdot 5 \cdot 7$ B) $5 \cdot 5 \cdot 3$ C) $15 \cdot 7$ D) $3 \cdot 3 \cdot 7$

41) 158 41) _____
A) $2 \cdot 79$ B) $2 \cdot 2 \cdot 79$ C) $2 \cdot 77$ D) $2 \cdot 2$

42) 198 42) _____
A) $2 \cdot 3 \cdot 11$ B) $2 \cdot 3 \cdot 3 \cdot 11$ C) $22 \cdot 3 \cdot 3$ D) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 11$

43) 32 43) _____
A) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ B) $2 \cdot 2 \cdot 2 \cdot 2$ C) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$ D) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 5$

44) 370 44) _____
A) $2 \cdot 5 \cdot 37$ B) $2 \cdot 2 \cdot 37$ C) $10 \cdot 37$ D) $5 \cdot 5 \cdot 37$

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

45) 40 45) _____
A) 2, 4, 5, 8, 10 B) 2, 4, 5 C) 2, 4, 5, 10 D) 2, 4, 5, 8

46) 5800 46) _____
A) 2, 4, 5, 8 B) 2, 4, 5 C) 2, 5, 4, 8, 10 D) 2, 5, 8, 10

47) 173 47) _____
A) 3, 9 B) 3, 5 C) 3 D) None

48) 551 48) _____
A) 3, 9 B) None C) 3 D) 3, 5

49) 26,809 49) _____
A) 3, 5 B) None C) 3 D) 5

50) 3526 50) _____
A) 2 B) 4 C) 3, 4 D) 2, 3, 4

51) 6486 51) _____
A) 2, 3, 6 B) 3, 4, 6 C) 4, 5, 6 D) 2, 3, 4

52) 1235 52) _____
A) 2, 5, 10 B) 5, 10 C) 5 D) 10

53) 5133 53) _____
A) 2, 3, 9 B) 9 C) 3, 9 D) 3

54) 33,820 54) _____
A) 4, 5, 10 B) 2, 4, 5, 10 C) 2, 5 D) 4, 5

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Identify the numerator and denominator.

55) $\frac{8}{9}$ 55) _____

A) Numerator: 9
Denominator: 8

B) Numerator: 17
Denominator: 1

C) Numerator: 8
Denominator: 9

D) Numerator: $\frac{9}{8}$
Denominator: 8

56) $\frac{19}{27}$ 56) _____

A) Numerator: 27
Denominator: 19

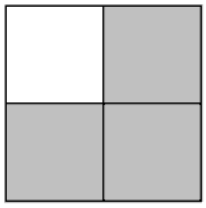
B) Numerator: 1
Denominator: $\frac{27}{19}$

C) Numerator: $\frac{19}{27}$
Denominator: 1

D) Numerator: 19
Denominator: 27

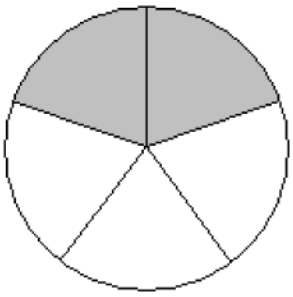
What part of the object or set of objects is shaded?

57) 57) _____



A) $\frac{1}{4}$ B) $\frac{3}{1}$ C) $\frac{3}{4}$ D) $\frac{1}{3}$

58) 58) _____



A) $\frac{3}{2}$ B) $\frac{2}{3}$ C) $\frac{5}{2}$ D) $\frac{2}{5}$

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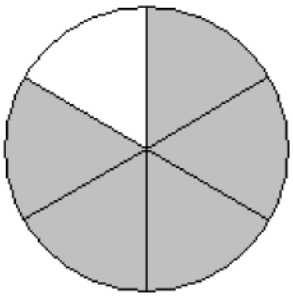
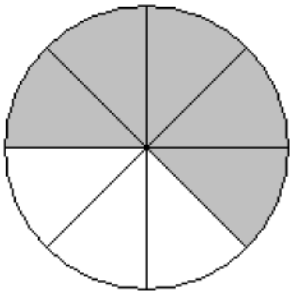
59) 

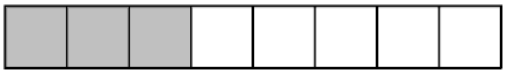
59) _____

A) $\frac{5}{6}$ B) $\frac{1}{6}$ C) $\frac{5}{1}$ D) $\frac{1}{5}$

60) 

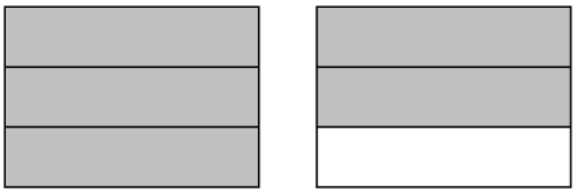
60) _____

A) $\frac{5}{3}$ B) $\frac{5}{8}$ C) $\frac{3}{8}$ D) $\frac{3}{5}$

61) 

61) _____

A) $\frac{3}{5}$ B) $\frac{5}{8}$ C) $\frac{5}{3}$ D) $\frac{3}{8}$

62) 

62) _____

A) $\frac{5}{3}$ B) $\frac{5}{6}$ C) $\frac{1}{5}$ D) $\frac{5}{1}$

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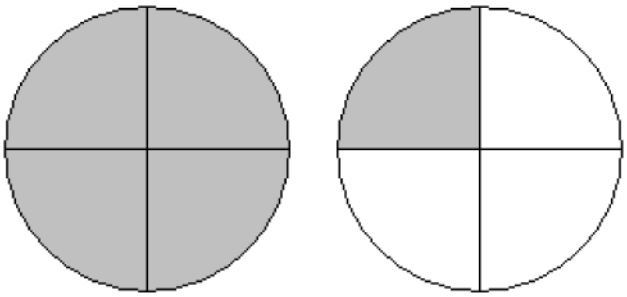
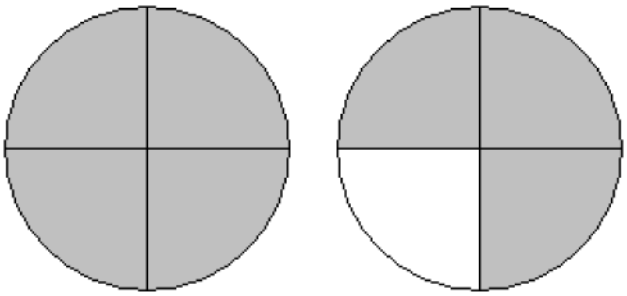
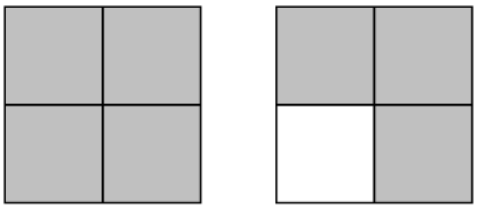
63)  63) _____

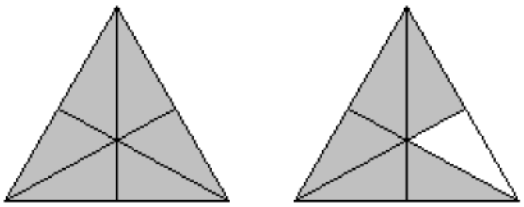
A) $\frac{5}{8}$ B) $\frac{5}{3}$ C) $\frac{5}{4}$ D) $\frac{3}{5}$

64)  64) _____

A) $\frac{7}{8}$ B) $\frac{3}{4}$ C) $\frac{1}{7}$ D) $\frac{7}{4}$

65)  65) _____

A) $\frac{7}{8}$ B) $\frac{7}{4}$ C) $\frac{7}{1}$ D) $\frac{1}{7}$

66)  66) _____

A) $\frac{1}{11}$ B) $\frac{11}{6}$ C) $\frac{11}{12}$ D) $\frac{11}{1}$

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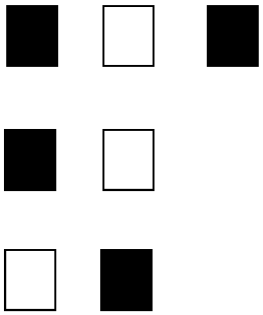
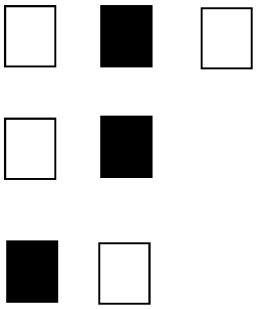
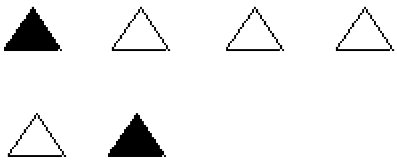
What part of the set of objects is shaded?

67)  67) _____

A) $\frac{4}{3}$ B) $\frac{4}{7}$ C) $\frac{7}{3}$ D) $\frac{3}{7}$

68)  68) _____

A) $\frac{3}{7}$ B) $\frac{4}{7}$ C) $\frac{7}{4}$ D) $\frac{3}{4}$

69)  69) _____

A) $\frac{6}{4}$ B) $\frac{4}{6}$ C) $\frac{2}{6}$ D) $\frac{2}{4}$

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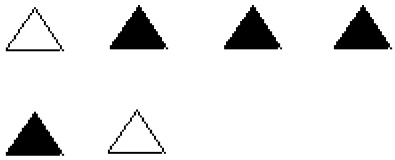
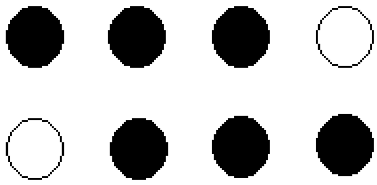
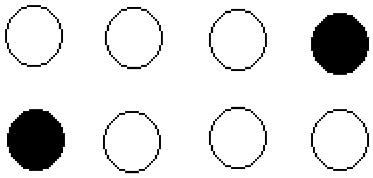
70)  70) _____

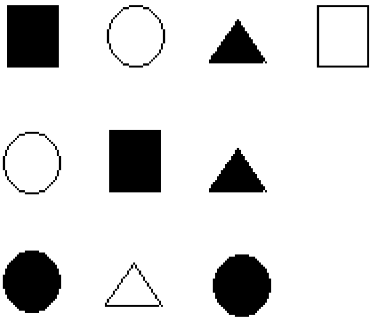
A) $\frac{2}{6}$ B) $\frac{4}{2}$ C) $\frac{6}{2}$ D) $\frac{4}{6}$

71)  71) _____

A) $\frac{8}{6}$ B) $\frac{6}{2}$ C) $\frac{6}{8}$ D) $\frac{2}{8}$

72)  72) _____

A) $\frac{6}{8}$ B) $\frac{8}{2}$ C) $\frac{2}{8}$ D) $\frac{2}{6}$

73)  73) _____

A) $\frac{4}{6}$ B) $\frac{6}{4}$ C) $\frac{6}{10}$ D) $\frac{4}{10}$

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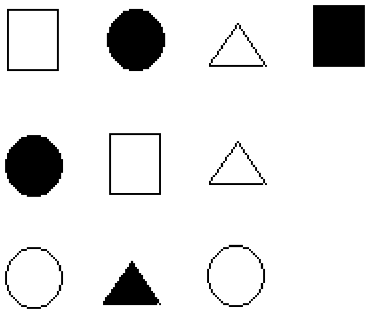
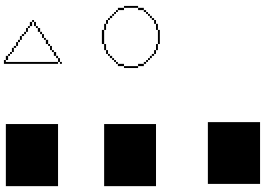
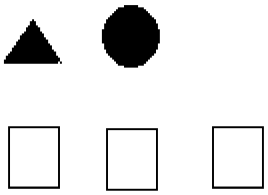
74)  74) _____

A) $\frac{6}{10}$ B) $\frac{4}{10}$ C) $\frac{4}{6}$ D) $\frac{6}{4}$

75)  75) _____

A) $\frac{3}{2}$ B) $\frac{2}{5}$ C) $\frac{3}{5}$ D) $\frac{2}{3}$

76)  76) _____

A) $\frac{3}{5}$ B) $\frac{5}{2}$ C) $\frac{2}{3}$ D) $\frac{2}{5}$

Provide an appropriate response.

77) There are 10 women and 7 men on a committee. What is the ratio of the number of women to the total number of people on the committee? 77) _____

A) $\frac{7}{17}$ B) $\frac{7}{10}$ C) $\frac{10}{7}$ D) $\frac{10}{17}$

78) There are 7 women and 8 men on a committee. What is the ratio of the number of men to the total number of people on the committee? 78) _____

A) $\frac{8}{15}$ B) $\frac{8}{7}$ C) $\frac{7}{15}$ D) $\frac{7}{8}$

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79) There are 6 women and 5 men on a committee. What is the ratio of the women to men? 79) _____

A) $\frac{6}{11}$ B) $\frac{5}{6}$ C) $\frac{5}{11}$ D) $\frac{6}{5}$

80) There are 4 women and 7 men on a committee. What is the ratio of the men to women? 80) _____

A) $\frac{7}{4}$ B) $\frac{7}{11}$ C) $\frac{4}{11}$ D) $\frac{4}{7}$

81) There are 9 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) $\frac{7}{2}$ B) $\frac{2}{9}$ C) $\frac{7}{9}$ D) $\frac{2}{7}$

82) There are 12 people on a committee, and 9 of them are women. What is the ratio of the number of men to the total number of people on the committee? 82) _____

A) $\frac{3}{12}$ B) $\frac{9}{3}$ C) $\frac{3}{9}$ D) $\frac{9}{12}$

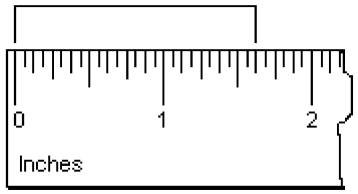
83) There are 13 people on a committee, and 5 of them are women. What is the ratio of the number of women to the number of men on the committee? 83) _____

A) $\frac{8}{13}$ B) $\frac{5}{13}$ C) $\frac{8}{5}$ D) $\frac{5}{8}$

84) There are 13 people on a committee, and 3 of them are women. What is the ratio of the number of men to the number of women on the committee? 84) _____

A) $\frac{3}{10}$ B) $\frac{3}{13}$ C) $\frac{10}{3}$ D) $\frac{10}{13}$

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



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

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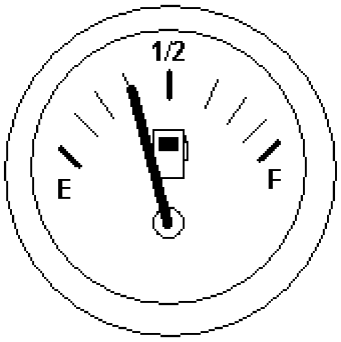
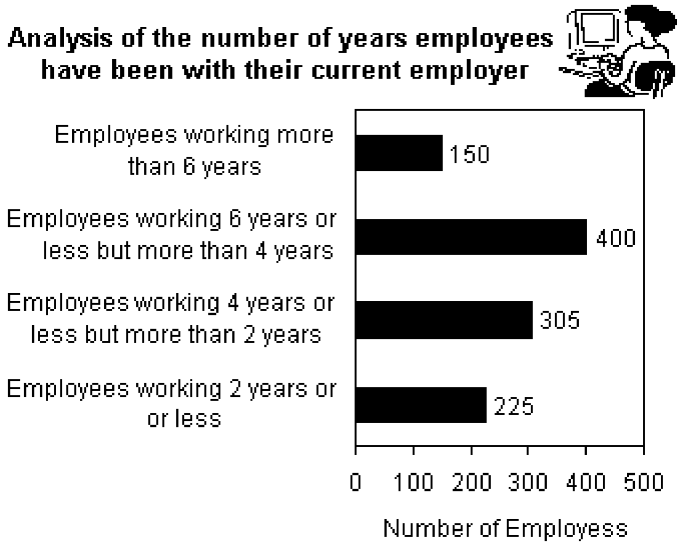
86) Give fraction notation for the amount of gas (a) in the tank and (b) used from a full tank. 86) _____



A) (a) $\frac{5}{8}$; (b) $\frac{3}{8}$ B) (a) $\frac{6}{10}$; (b) $\frac{4}{10}$ 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 emp 87) _____
have been with the company. Use the table to answer the question.



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 more than 6 years?

A) $\frac{305}{1080}$ B) $\frac{150}{305}$ C) $\frac{1080}{305}$ D) $\frac{305}{150}$

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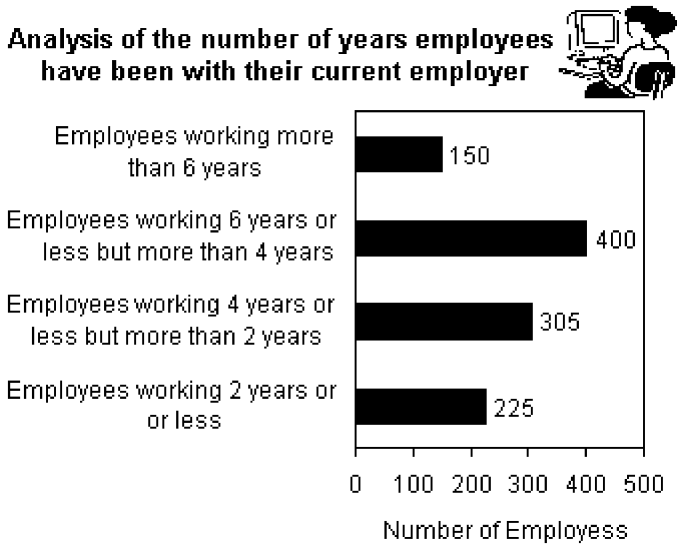
88) A company with 1080 total employees prepares the following analysis for the length of time its emp 88) _____
have been with the company. Use the table to answer the question.



What is the ratio of the number of employees working 6 years or less but more than 4 years to the total number of employees?

A) $\frac{1080}{400}$ B) $\frac{150}{1080}$ C) $\frac{1080}{150}$ D) $\frac{400}{1080}$

Simplify.

89) $\frac{0}{16}$ 89) _____

A) 1 B) Not defined C) 0 D) 16

90) $\frac{0}{694}$ 90) _____

A) 694 B) 1 C) 0 D) Not defined

91) $\frac{19}{0}$ 91) _____

A) $\frac{1}{19}$ B) 0 C) Not defined D) 19

92) $\frac{553}{0}$ 92) _____

A) Not defined B) 553 C) $\frac{1}{553}$ D) 0

93) $\frac{2}{2}$ 93) _____

A) 2 B) 0 C) 1 D) Not defined

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94) $\frac{25}{25}$ 94) _____

A) Not defined B) 0 C) 25 D) 1

95) $\frac{88}{1}$ 95) _____

A) 0 B) 88 C) 1 D) Not defined

96) $\frac{265}{1}$ 96) _____

A) 0 B) 265 C) 1 D) Not defined

97) $\frac{13 - 13}{273}$ 97) _____

A) 13 B) 0 C) Not defined D) $\frac{1}{273}$

98) $\frac{92}{56 - 56}$ 98) _____

A) 92 B) 0 C) $\frac{92}{56}$ D) Not defined

Multiply.

99) $\frac{1}{3} \cdot \frac{1}{3}$ 99) _____

A) $\frac{1}{6}$ B) $\frac{2}{9}$ C) $\frac{1}{9}$ D) $\frac{2}{6}$

100) $\frac{1}{4} \times \frac{1}{8}$ 100) _____

A) $\frac{1}{12}$ B) $\frac{2}{32}$ C) $\frac{1}{32}$ D) $\frac{2}{12}$

101) $\frac{3}{7} \cdot \frac{1}{4}$ 101) _____

A) $\frac{1}{28}$ B) $\frac{3}{28}$ C) $\frac{3}{11}$ D) $\frac{4}{11}$

102) $\frac{1}{14} \times \frac{9}{14}$ 102) _____

A) $\frac{9}{28}$ B) $\frac{81}{196}$ C) $\frac{10}{28}$ D) $\frac{9}{196}$

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103) $\frac{3}{4} \cdot \frac{3}{5}$ 103) _____

A) $\frac{1}{20}$ B) $\frac{9}{20}$ C) $\frac{3}{20}$ D) $\frac{6}{9}$

104) $\frac{4}{5} \cdot \frac{4}{5}$ 104) _____

A) $\frac{8}{10}$ B) 1 C) $\frac{16}{25}$ D) $\frac{16}{5}$

105) $\frac{4}{7} \cdot \frac{5}{9}$ 105) _____

A) $\frac{9}{63}$ B) $\frac{20}{35}$ C) $\frac{9}{16}$ D) $\frac{20}{63}$

106) $\frac{3}{8} \times \frac{5}{7}$ 106) _____

A) $\frac{15}{56}$ B) $\frac{15}{40}$ C) $\frac{8}{15}$ D) $\frac{8}{56}$

107) $\frac{8}{41} \cdot \frac{9}{43}$ 107) _____

A) $\frac{72}{1763}$ B) $\frac{49}{1000}$ C) $\frac{49}{110}$ D) $\frac{72}{110}$

108) $\frac{13}{19} \cdot \frac{15}{17}$ 108) _____

A) $\frac{195}{36}$ B) $\frac{28}{36}$ C) $\frac{195}{323}$ D) $\frac{28}{323}$

109) $3 \cdot \frac{1}{5}$ 109) _____

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

110) $\frac{1}{5} \times 2$ 110) _____

A) $\frac{3}{5}$ B) $\frac{1}{10}$ C) $\frac{2}{5}$ D) $\frac{2}{10}$

111) $\frac{3}{5} \cdot 1$ 111) _____

A) 1 B) $\frac{4}{5}$ C) $\frac{4}{6}$ D) $\frac{3}{5}$

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112) $1 \times \frac{2}{5}$ 112) _____

A) 1 B) $\frac{3}{6}$ C) $\frac{2}{5}$ D) $\frac{3}{5}$

113) $\frac{4}{9} \cdot 8$ 113) _____

A) $\frac{32}{9}$ B) $\frac{12}{9}$ C) $\frac{32}{72}$ D) $\frac{4}{72}$

114) $11 \cdot \frac{5}{7}$ 114) _____

A) $\frac{55}{7}$ B) $\frac{5}{77}$ C) $\frac{16}{7}$ D) $\frac{55}{77}$

115) $\frac{2}{7} \cdot 29$ 115) _____

A) $\frac{2}{203}$ B) $\frac{31}{7}$ C) $\frac{58}{203}$ D) $\frac{58}{7}$

116) $43 \times \frac{3}{7}$ 116) _____

A) $\frac{129}{301}$ B) $\frac{3}{301}$ C) $\frac{129}{7}$ D) $\frac{46}{7}$

117) $\frac{2}{5} \cdot 40$ 117) _____

A) $\frac{2}{200}$ B) $\frac{80}{5}$ C) $\frac{42}{5}$ D) $\frac{80}{200}$

Solve.

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

A) $\frac{3}{10}$ ft^2 B) $\frac{2}{21}$ ft^2 C) $\frac{3}{21}$ ft^2 D) $\frac{3}{7}$ ft^2

119) Each piece of pizza is $\frac{1}{11}$ of the pizza. What fraction of the pizza is $\frac{1}{2}$ of a piece? 119) _____

A) $\frac{2}{13}$ B) $\frac{1}{22}$ C) $\frac{1}{13}$ D) $\frac{2}{22}$

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120) One of 15 initial applicants for a certain job will receive a first interview. Of those who receive a first interview, one of 13 will receive a second interview. What fraction of initial applicants will recei second interview? 120) _____

A) $\frac{1}{28}$ B) $\frac{2}{28}$ C) $\frac{1}{195}$ D) $\frac{2}{195}$

121) Greg's water bottle can hold $\frac{7}{8}$ L. When he starts on his bicycle race, his water bottle is $\frac{1}{3}$ full. How much water does he have? 121) _____

A) $\frac{8}{11}$ L B) $\frac{8}{3}$ L C) $\frac{7}{11}$ L D) $\frac{7}{24}$ 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) $\frac{3}{20}$ B) $\frac{4}{15}$ C) $\frac{1}{5}$ D) $\frac{4}{9}$

123) It takes $\frac{5}{5}$ lb of flour to make a cake. How much flour is needed to make 4 cakes? 123) _____

A) $\frac{20}{20}$ lb B) $\frac{20}{5}$ lb C) $\frac{5}{20}$ lb D) $\frac{9}{5}$ lb

124) Julia preheated her oven for 25 minutes. What fraction of an hour was this? (1 hour = 60 min) 124) _____

A) $\frac{24}{60}$ hr B) $\frac{25}{30}$ hr C) $\frac{60}{25}$ hr D) $\frac{25}{60}$ hr

125) Mr. Rivera opened a package of 25 drinking cups for his restaurant. During the day, 4 cups were used. What fraction of the package of cups was used? 125) _____

A) $\frac{21}{1}$ of the package B) $\frac{25}{4}$ of the package

C) $\frac{4}{21}$ of the package D) $\frac{4}{25}$ of the package

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

126) $\frac{3}{7} = \frac{?}{21}$ 126) _____

A) $\frac{21}{21}$ B) $\frac{6}{21}$ C) $\frac{11}{21}$ D) $\frac{9}{21}$

127) $\frac{9}{15} = \frac{?}{105}$ 127) _____

A) $\frac{9}{105}$ B) $\frac{135}{105}$ C) $\frac{945}{1575}$ D) $\frac{63}{105}$

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128) $\frac{16}{6} = \frac{?}{12}$ 128) _____

A) $\frac{32}{12}$ B) $\frac{192}{72}$ C) $\frac{16}{12}$ D) $\frac{96}{12}$

129) $\frac{11}{16} = \frac{?}{256}$ 129) _____

A) $\frac{11}{256}$ B) $\frac{27}{256}$ C) $\frac{121}{256}$ D) $\frac{176}{256}$

130) $\frac{8}{23} = \frac{?}{138}$ 130) _____

A) $\frac{184}{138}$ B) $\frac{48}{138}$ C) $\frac{14}{138}$ D) $\frac{8}{138}$

Simplify.

131) $\frac{2}{4}$ 131) _____

A) $\frac{2}{2}$ B) $\frac{1}{2}$ C) $\frac{2}{1}$ D) $\frac{1}{4}$

132) $\frac{8}{12}$ 132) _____

A) $\frac{4}{6}$ B) $\frac{3}{4}$ C) $\frac{2}{12}$ D) $\frac{2}{3}$

133) $\frac{24}{8}$ 133) _____

A) $\frac{6}{2}$ B) $\frac{1}{3}$ C) $\frac{3}{8}$ D) 3

134) $\frac{125}{25}$ 134) _____

A) $\frac{10}{2}$ B) $\frac{5}{25}$ C) 5 D) $\frac{1}{5}$

135) $\frac{24}{42}$ 135) _____

A) $\frac{4}{6}$ B) $\frac{6}{7}$ C) $\frac{24}{42}$ D) $\frac{4}{7}$

136) $\frac{30}{40}$ 136) _____

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

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137) $\frac{60}{72}$ 137) _____

A) $\frac{12}{6}$ B) $\frac{5}{12}$ C) $\frac{60}{72}$ D) $\frac{5}{6}$

138) $\frac{150}{175}$ 138) _____

A) $\frac{25}{7}$ B) $\frac{150}{175}$ C) $\frac{6}{7}$ D) $\frac{6}{25}$

139) $\frac{22}{28}$ 139) _____

A) $\frac{11}{2}$ B) $\frac{11}{14}$ C) $\frac{2}{14}$ D) $\frac{22}{28}$

140) $\frac{465}{345}$ 140) _____

A) $\frac{31}{23}$ B) $\frac{155}{115}$ C) $\frac{115}{155}$ D) $\frac{31}{69}$

Use = or ≠ for □ to write a true sentence.

141) $\frac{1}{2}$ □ $\frac{2}{4}$ 141) _____

A) ≠ B) =

142) $\frac{1}{3}$ □ $\frac{2}{7}$ 142) _____

A) ≠ B) =

143) $\frac{4}{6}$ □ $\frac{12}{18}$ 143) _____

A) ≠ B) =

144) $\frac{2}{6}$ □ $\frac{6}{17}$ 144) _____

A) = B) ≠

145) $\frac{7}{5}$ □ $\frac{13}{10}$ 145) _____

A) = B) ≠

146) $\frac{2}{10}$ □ $\frac{200}{1000}$ 146) _____

A) = B) ≠

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147) $\frac{40}{100} \square \frac{390}{1000}$ 147) _____

A) $\neq$ B) $=$

148) $\frac{3}{7} \square \frac{30}{70}$ 148) _____

A) $=$ B) $\neq$

149) $\frac{184}{299} \square \frac{136}{221}$ 149) _____

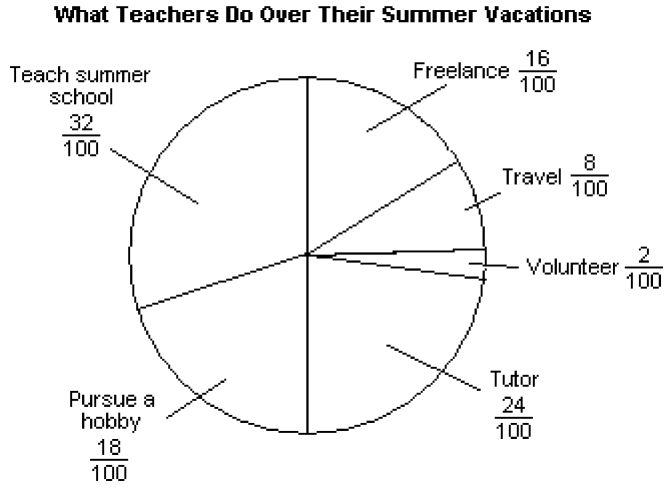
A) $=$ B) $\neq$

150) $\frac{29}{10} \square \frac{290}{1000}$ 150) _____

A) $\neq$ B) $=$

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 freelance. 151) _____



A) $\frac{9}{50}$ B) $\frac{4}{25}$ C) $\frac{3}{20}$ D) $\frac{1}{5}$

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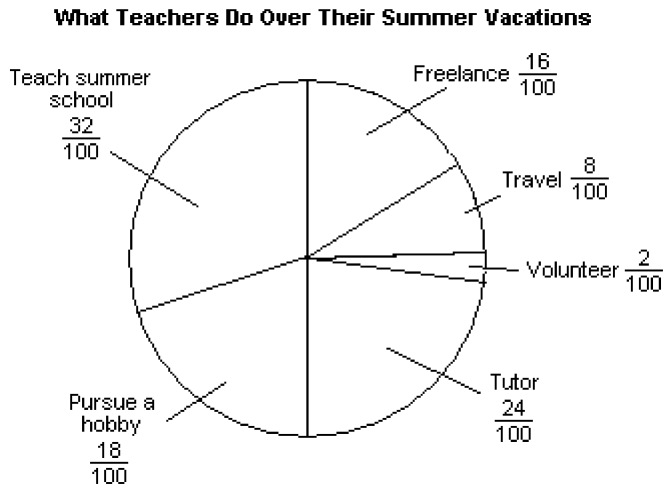
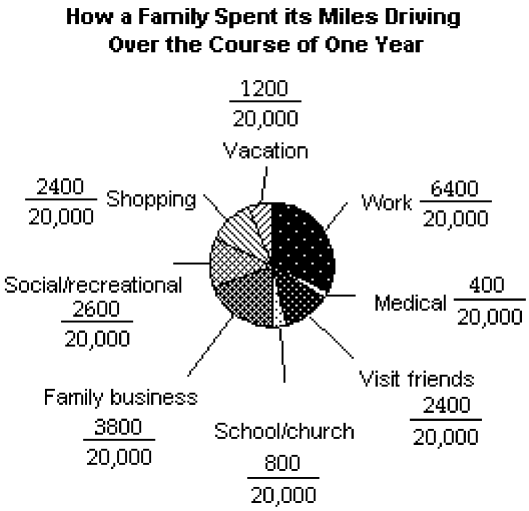
152) What do teachers do during their summer vacations? The responses of 100 teachers are organized in the circle graph below. Simplify the fraction representing the number of teachers who pursue a hobby. 152) _____



A) $\frac{6}{25}$ B) $\frac{7}{50}$ C) $\frac{4}{25}$ D) $\frac{9}{50}$

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 Work miles driven. 153) _____



A) $\frac{8}{25}$ B) $\frac{1}{50}$ C) $\frac{1}{25}$ D) $\frac{3}{25}$

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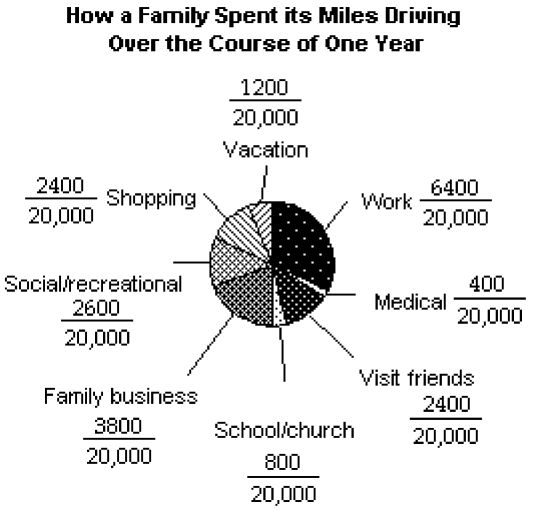
154) How did a family spend a total of 20,000 miles driving to different locations for various purposes over the course of one year? Simplify the fraction representing the number of School/church miles driven. 154) _____



A) $\frac{4}{25}$ B) $\frac{1}{25}$ C) $\frac{2}{25}$ D) $\frac{1}{50}$

Multiply and simplify.

155) $\frac{4}{9} \cdot \frac{1}{4}$ 155) _____

A) $\frac{4}{36}$ B) $\frac{5}{13}$ C) $\frac{1}{9}$ D) $\frac{4}{13}$

156) $\frac{1}{4} \cdot \frac{2}{5}$ 156) _____

A) $\frac{1}{3}$ B) $\frac{2}{20}$ C) $\frac{2}{7}$ D) $\frac{1}{10}$

157) $\frac{9}{12} \cdot \frac{1}{12}$ 157) _____

A) 9 B) $\frac{5}{12}$ C) $\frac{1}{16}$ D) $\frac{1}{256}$

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) $\frac{19}{5} \cdot \frac{15}{14}$ 159) _____

A) $\frac{57}{14}$ B) $\frac{14}{15}$ C) $\frac{285}{70}$ D) $\frac{34}{19}$

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160) $\frac{18}{8} \cdot \frac{4}{6}$ 160) _____

A) $\frac{72}{48}$ B) $\frac{11}{10}$ C) 1 D) $\frac{3}{2}$

161) $\frac{3}{16} \cdot \frac{8}{16}$ 161) _____

A) $\frac{3}{4}$ B) $\frac{3}{32}$ C) $\frac{11}{32}$ D) $\frac{3}{8}$

162) $\frac{4}{10} \cdot \frac{42}{160}$ 162) _____

A) $\frac{168}{1600}$ B) $\frac{23}{85}$ C) $\frac{23}{800}$ D) $\frac{21}{200}$

163) $\frac{19}{32} \cdot \frac{4}{9}$ 163) _____

A) $\frac{76}{288}$ B) $\frac{23}{288}$ C) $\frac{23}{44}$ D) $\frac{19}{72}$

164) $\frac{9}{7} \cdot \frac{7}{9}$ 164) _____

A) 1 B) 0 C) $\frac{81}{49}$ D) $\frac{49}{81}$

165) $12 \cdot \frac{1}{12}$ 165) _____

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

166) $24 \cdot \frac{1}{4}$ 166) _____

A) 96 B) 6 C) $\frac{24}{96}$ D) $\frac{1}{96}$

167) $27 \cdot \frac{5}{9}$ 167) _____

A) $\frac{367}{90}$ B) 20 C) $\frac{135}{9}$ D) 15

168) $13 \cdot \frac{3}{8}$ 168) _____

A) $\frac{39}{8}$ B) $\frac{39}{104}$ C) 104 D) $\frac{3}{104}$

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169) $\frac{1}{6} \cdot 27$ 169) _____

A) $\frac{9}{2}$ B) $\frac{27}{27}$ C) $\frac{27}{162}$ D) $\frac{1}{162}$

170) $\frac{1}{6} \cdot 180$ 170) _____

A) $\frac{180}{6}$ B) $\frac{180}{1080}$ C) 3 D) 30

171) $\frac{3}{5} \cdot 350$ 171) _____

A) 180 B) $\frac{1050}{5}$ C) 210 D) $\frac{122503}{5}$

Solve.

172) There are 40 students in Jose's class. $\frac{1}{4}$ of the students are science majors. How many students are science majors? 172) _____

A) 40 students B) 30 students C) 8 students D) 10 students

173) Tyler and his sister arranged a party for their father's birthday. The total cost of the party was \$900. Tyler paid $\frac{3}{5}$ of the total cost and his sister paid the remainder. How much did Tyler pay? 173) _____

A) \$555 B) \$550 C) \$560 D) \$540

174) When Maria finished medical school she owed \$60,000 in student loans. She repaid $\frac{2}{3}$ of the total amount within two years of graduating. How much did she repay within two years of graduating? 174) _____

A) \$36,000 B) \$40,000 C) \$4000 D) \$44,000

175) A storehouse stores 720 different inventory items. $\frac{3}{10}$ of these items are perishable. How many of the inventory items are perishable? 175) _____

A) 219 items B) 213 items C) 72 items D) 216 items

176) A restaurant has a capacity of 80 patrons. If the restaurant is $\frac{3}{4}$ full, how many patrons are at the restaurant? 176) _____

A) 63 patrons B) 57 patrons C) 20 patrons D) 60 patrons

177) A recipe calls for $\frac{2}{5}$ cup of milk. How much milk should be used to make $\frac{1}{2}$ of the recipe? 177) _____

A) $\frac{1}{10}$ cup B) $\frac{1}{5}$ cup C) $\frac{2}{5}$ cup D) $\frac{3}{10}$ cup

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178) On a map, 1 in. represents 300 miles. How much does $\frac{1}{4}$ in. represent? 178) _____

A) 65 mi B) 85 mi C) 1200 mi D) 75 mi

179) A company has 37,800 employees. Of these, $\frac{1}{4}$ drive alone to work, $\frac{1}{5}$ car pool, $\frac{1}{9}$ use public transportation, $\frac{1}{10}$ cycle, and the remainder use other methods of transportation. How many employees use each method of transportation? 179) _____

A) Drive alone: 9550; car pool: 7560; public transportation: 4100; cycle: 3780; other: 1000
B) Drive alone: 945; car pool: 7560; public transportation: 4200; cycle: 3780; other: 12,810
C) Drive alone: 9450; car pool: 7560; public transportation: 4200; cycle: 3780; other: 3780
D) Drive alone: 9450; car pool: 7560; public transportation: 4200; cycle: 3780; other: 12,810

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 $\frac{2}{35}$ in. go into a piece of wood when it is turned 10 complete rotations clockwise? 180) _____

A) $\frac{1}{175}$ in. B) $\frac{1}{7}$ in. C) $\frac{7}{4}$ in. D) $\frac{4}{7}$ in.

Find the reciprocal.

181) $\frac{4}{5}$ 181) _____

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

182) 3 182) _____

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

183) 19 183) _____

A) $\frac{19}{1}$ B) $\frac{1}{19}$ C) 19 D) 1

184) $\frac{1}{7}$ 184) _____

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

185) $\frac{1}{20}$ 185) _____

A) 20 B) 0 C) $\frac{1}{20}$ D) 1

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

A) 3 B) $\frac{3}{5}$ C) $\frac{3}{1}$ D) $\frac{1}{5}$

Divide and simplify.

187) $\frac{2}{5} \div \frac{5}{8}$ 187) _____

A) $\frac{1}{4}$ B) $\frac{25}{16}$ C) $\frac{16}{25}$ D) 4

188) $\frac{5}{6} \div \frac{10}{3}$ 188) _____

A) $\frac{9}{25}$ B) $\frac{25}{9}$ C) 4 D) $\frac{1}{4}$

189) $\frac{4}{3} \div \frac{1}{6}$ 189) _____

A) $\frac{9}{2}$ B) 8 C) $\frac{2}{9}$ D) $\frac{1}{8}$

190) $\frac{7}{10} \div 8$ 190) _____

A) $\frac{7}{18}$ B) $\frac{7}{80}$ C) None of these D) $\frac{7}{10}$

191) $\frac{25}{2} \div 5$ 191) _____

A) $\frac{125}{2}$ B) 5 C) $\frac{5}{2}$ D) $\frac{2}{5}$

192) $35 \div \frac{5}{3}$ 192) _____

A) $\frac{175}{3}$ B) 7 C) $\frac{1}{21}$ D) 21

193) $14 \div \frac{2}{5}$ 193) _____

A) $\frac{1}{35}$ B) 35 C) 7 D) $\frac{28}{5}$

194) $\frac{5}{12} \div \frac{35}{24}$ 194) _____

A) $\frac{10}{7}$ B) $\frac{2}{7}$ C) $\frac{7}{2}$ D) $\frac{175}{288}$

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Solve and simplify.

195) $\frac{3}{4} \cdot t = 60$ 195) _____

A) 24 B) 90 C) 80 D) 60

196) $\frac{6}{5} \cdot x = 78$ 196) _____

A) 18 B) 78 C) 94 D) 65

197) $\frac{9}{2} \cdot y = \frac{63}{2}$ 197) _____

A) 7 B) $\frac{1}{7}$ C) $\frac{567}{4}$ D) 18

198) $\frac{9}{12} \cdot n = \frac{27}{6}$ 198) _____

A) 3 B) $\frac{27}{8}$ C) $\frac{1}{6}$ D) 6

199) $\frac{2}{3} \cdot x = \frac{8}{15}$ 199) _____

A) $\frac{16}{225}$ B) $\frac{4}{5}$ C) $\frac{5}{6}$ D) $\frac{30}{8}$

200) $\frac{3}{8} \cdot t = 57$ 200) _____

A) 86 B) 152 C) 57 D) 27

201) $\frac{9}{4} \cdot x = 171$ 201) _____

A) 171 B) 23 C) 76 D) 385

202) $k \cdot \frac{15}{24} = \frac{5}{18}$ 202) _____

A) $\frac{3}{4}$ B) $\frac{4}{9}$ C) $\frac{120}{270}$ D) $\frac{25}{576}$

203) $x \cdot \frac{12}{27} = \frac{18}{45}$ 203) _____

A) $\frac{2}{3}$ B) $\frac{9}{10}$ C) $\frac{8}{45}$ D) $\frac{486}{540}$

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Solve.

204) A land developer wants to develop 9 acres of land. Each lot in the development is to be $\frac{1}{2}$ of an acre. How many lots will the land developer have in the 9 acres? 204) _____

A) 2 lots B) 18 lots C) $\frac{1}{6}$ lot D) $\frac{9}{2}$ lot(s)

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) $3\frac{3}{4}$ servings B) 8 servings C) 16 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 9 dose cups, how many children's doses are there in the bottle? 206) _____

A) 54 doses B) $9\frac{1}{6}$ doses C) $1\frac{1}{2}$ dose(s) D) 15 doses

207) Joe has traveled $\frac{8}{9}$ of his total trip. He has traveled 1040 miles so far. How many more miles does he have to travel? 207) _____

A) 1170 miles B) 130 miles C) None of these D) $115\frac{5}{9}$ miles

208) Allen has traveled $\frac{4}{5}$ of his total trip. He has traveled 32 miles so far. How many more miles does he have to travel? 208) _____

A) $6\frac{2}{5}$ miles B) 40 miles C) 8 miles D) None of these

209) A statistician has readings that take $\frac{1}{3}$ minute each to read and record. How many readings can be completed in 24 minutes? 209) _____

A) 25 readings B) 9 readings C) 72 readings D) 8 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) 18 servings B) $9\frac{1}{3}$ servings C) 32 servings D) $6\frac{3}{4}$ servings

211) A piece of cheese weighing $\frac{4}{7}$ lb is to be divided into 8 equal portions. What will be the weight of ea portion? 211) _____

A) $\frac{32}{7}$ lb B) $\frac{2}{7}$ lb C) 14 lb D) $\frac{1}{14}$ lb

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212) A piece of cable which is $\frac{4}{5}$ m long is to be cut into pieces $\frac{1}{10}$ m long. How many pieces will there be 212) _____

A) 40 pieces B) 50 pieces C) $\frac{1}{8}$ piece D) 8 pieces

Provide an appropriate response.

213) The only consecutive whole numbers that are both prime numbers are _ and _. 213) _____

A) 1 and 2 B) 2 and 3 C) 6 and 7 D) 0 and 1

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 $\frac{3}{10}$, the answer is _ the fraction. 214) _____

A) Always greater than
B) Always less than
C) Sometimes greater than
D) Cannot tell without knowing the fraction

215) Finish the statement with a correct response. To divide two fractions one needs to: 215) _____

A) Add the numerators and factor the denominators.
B) Invert the second fraction (divisor), add the numerators and multiply the denominators.
C) Invert the second fraction (divisor) and multiply.
D) Add the numerators and multiply the denominators.

216) If a fraction simplifies to 1, what, if anything can you conclude about its numerator and denominator? 216) _____

A) The numerator can be anything, the denominator is 1.
B) The numerator is 1, the denominator can be anything.
C) The numerator and denominator are equal.
D) The numerator is smaller than the denominator.

217) Y represents a positive whole number. Tell which of the quantities below is smallest and which is la 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: B; largest: D
B) Smallest: D; largest: B
C) Smallest: D; largest: A
D) Smallest: A; 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 1.
B) Numerator can be anything, denominator is 0.
C) Numerator is 0, denominator is not 0.
D) Numerator is 0, denominator is 0.

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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 true B) A false, B true C) A true, B false 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) Three B) Four C) One D) Two

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) _____

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

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

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

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

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201) C
202) B
203) B
204) B
205) C
206) A
207) B
208) C
209) C
210) C
211) D
212) D
213) B
214) A
215) C
216) C
217) A
218) C
219) C
220) A
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: $\frac{7}{21}$.

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