

COURSE

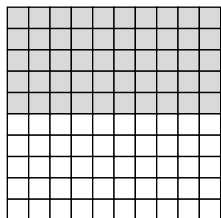
**Diagnostic Assessment****2****Number and Quantitative Reasoning**

- Identify the place value of the underlined digit 13,122,456.  
**A** millions  
**B** hundred thousands  
**C** ten thousands  
**D** thousands
- Which is 6.2 million written in standard form?  
**F** 62,000,000  
**G** 6,200,000  
**H** 62,000  
**J** 6,200
- Round 517,429 to the nearest hundred.  
**A** 520,000                      **C** 517,400  
**B** 517,430                      **D** 517,430
- Which statement is true?  
**F**  $272,727 > 277,200$   
**G**  $94,320 < 93,420$   
**H**  $13,061 > 13,100$   
**J**  $43,121 > 42,999$
- Which set of numbers is ordered from least to greatest?  
**A** 513, 699, 701, 830  
**B** 513, 701, 830, 699  
**C** 830, 701, 699, 513  
**D** 513, 701, 699, 830
- Identify the number sets that contain the number 45.  
**F** counting, whole, even  
**G** counting, whole, even, odd  
**H** counting, whole  
**J** counting, even
- Which list contains the first three multiples of the number 10?  
**A** 10, 11, 12  
**B** 10, 15, 20  
**C** 10, 20, 30  
**D** 10, 100, 1,000
- Which list contains all the factors of 36?  
**F** 1, 36, 72  
**G** 1, 2, 3, 4, 6, 9, 12, 18, 36  
**H** 1, 36  
**J** 1, 2, 4, 6, 8, 18, 24, 36
- Which number is not prime?  
**A** 11                                  **C** 37  
**B** 13                                  **D** 38
- Which number is prime?  
**F** 27                                  **H** 53  
**G** 39                                  **J** 63
- Evaluate  $20^2$ .  
**A** 22                                  **C** 202  
**B** 40                                  **D** 400
- Find the value of  $6^4$ .  
**F** 24                                  **H** 1,296  
**G** 64                                  **J** 6,666
- Find the next three numbers in the pattern.  
2400, 1200, 600, 300, ...  
**A** 150, 75, 37.5  
**B** 100, 50, 25  
**C** 150, 50, 1  
**D** 100, 33, 11

**COURSE** **Diagnostic Assessment**

**2** **Number and Quantitative Reasoning, continued**

14. What number is represented by the shaded portion of the grid?



- F  $\frac{1}{5}$                       H  $\frac{50}{50}$   
 G 0.05                      J 0.5

15. Write 794.65 in word form.

- A seven, nine, four, six, five  
 B seventy-nine four and sixty-five hundredths  
 C seven hundred ninety-four and sixty-five hundredths  
 D seven hundred ninety-four and sixty-five tenths

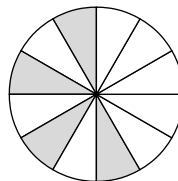
16. Round 17.341 to the nearest tenth.

- F 17.3                      H 17.34  
 G 17.341                      J 17

17. Which set of numbers is ordered from least to greatest?

- A 4.2, 0.42, 0.45, 0.39  
 B 0.39, 0.45, 0.42, 4.2  
 C 4.2, 0.45, 0.42, 0.39  
 D 0.39, 0.42, 0.45, 4.2

18. Write the fraction for the shaded part of the circle.



- F  $\frac{1}{4}$                       H  $\frac{1}{3}$   
 G  $\frac{1}{2}$                       J  $\frac{2}{3}$

19. Simplify  $\frac{27}{30}$ .

- A  $\frac{1}{3}$                       C  $\frac{1}{10}$   
 B  $\frac{9}{10}$                       D  $\frac{3}{10}$

20. Round  $\frac{5}{11}$  to the nearest half.

- F 0                      H 1  
 G  $\frac{1}{2}$                       J  $\frac{3}{2}$

21. Write  $\frac{17}{4}$  as a mixed number.

- A  $4\frac{1}{4}$                       C  $5\frac{3}{4}$   
 B  $3\frac{3}{4}$                       D 13

22. Which improper fraction is equal to  $4\frac{3}{5}$ ?

- F  $\frac{43}{5}$                       H  $\frac{4.3}{5}$   
 G  $\frac{120}{5}$                       J  $\frac{23}{5}$

**COURSE**

**Diagnostic Assessment**

**2**

**Number and Quantitative Reasoning, continued**

23. Find a common denominator for

$$\frac{1}{12} + \frac{1}{18}$$

- A** 24                                      **C** 48  
**B** 36                                      **D** 70

24. Which number should replace the question mark to make the statement true?

$$\frac{5}{6} = \frac{?}{48}$$

- F** 8    **H** 40  
**G** 13    **J** 47

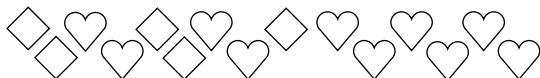
25. Compare.  $3\frac{6}{7}$    $3\frac{5}{6}$

- A** >    **C** =  
**B** <

26. Write  $\frac{17}{20}$  as a decimal.

- F** 0.17    **H** 0.95  
**G** 0.85    **J** 1.7

27. What is the ratio of hearts to diamonds?

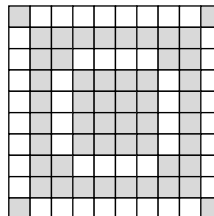


- A** 2:3    **C** 5:1  
**B** 3:2    **D** 2:1

28. Simplify: 20 brushes to 15 combs.

- F** 4:3    **H** 5:1  
**G** 3:4    **J** 1:5

29. What percent represents the shaded part of the grid?



- A** 40%    **C** 52%  
**B** 48%    **D** 60%

30. Write 0.38 as a percent.

- F** 0.38%    **H** 38%  
**G** 3.8%    **J** 3,800%

31. Which percent is equivalent to  $\frac{12}{25}$ ?

- A** 12%    **C** 24%  
**B** 13%    **D** 48%

32. Which statement is true?

- F**  $\frac{1}{2} < 0.49$   
**G**  $62\% > \frac{3}{5}$   
**H**  $\frac{4}{5} < 75\%$   
**J**  $48\% = 4.8$

33. Which integer represents a debt of \$42?

- A** -\$42  
**B** \$42  
**C** \$0  
**D** -\$420

**COURSE** **Diagnostic Assessment**  
**2** **Operations**

34. Find the quotient.  $4\overline{)217}$   
**F** 48 r 9                      **H** 54  
**G** 53 r 7                        **J** 54 r 1

35. Find the product.  
 $6 \times 6 \times 6 \times 6$   
**A** 24                              **C** 6,666  
**B** 1,296                        **D** 7,776

36. Multiply.  $12 \times 7$   
**F** 19                              **H** 84  
**G** 72                               **J** 127

37.  $\frac{36}{1,000} =$  \_\_\_\_\_  
**A** 0.36                        **C** 0.0036  
**B** 0.036                       **D** 0.00036

38. Divide.  $108 \div 12$   
**F** 7                                **H** 9  
**G** 8                                **J** 10

39. Divide  $12\overline{)342}$ . Write any remainder as a decimal.  
**A** 18                              **C** 28  
**B** 26.4                        **D** 28.5

40. Multiply.  $\begin{array}{r} 10.4 \\ \times 0.3 \\ \hline \end{array}$   
**F** 30.12                        **H** 31.2  
**G** 30.7                         **J** 3.12

41. Multiply.  $100 \times 7.4$   
**A** 74                              **C** 7,400  
**B** 740                            **D** 74,000

42. Add.  $\begin{array}{r} \frac{5}{12} \\ + \frac{1}{6} \\ \hline \end{array}$   
**F**  $\frac{6}{18}$                             **H**  $\frac{7}{12}$   
**G**  $\frac{2}{3}$                              **J**  $\frac{1}{2}$

43.  $\frac{5}{7} - \frac{4}{7}$   
**A**  $\frac{1}{7}$                               **C**  $\frac{20}{7}$   
**B**  $\frac{9}{7}$                               **D**  $\frac{3}{7}$

44. Multiply  $\frac{3}{4} \times \frac{2}{3}$ . Write the answer in simplest form.  
**F**  $\frac{5}{7}$                               **H**  $\frac{1}{2}$   
**G**  $\frac{5}{12}$                             **J**  $\frac{6}{7}$

45. Multiply.  $\frac{1}{2} \times 24$   
**A** 6                                **C** 48  
**B** 12                              **D** 96


46. What is 20% of 200?  
**F** 10                              **H** 40  
**G** 20                              **J** 400

47. Subtract.  $(-15) - 7$   
**A** -22                            **C** -8  
**B** 22                              **D** 8

## COURSE

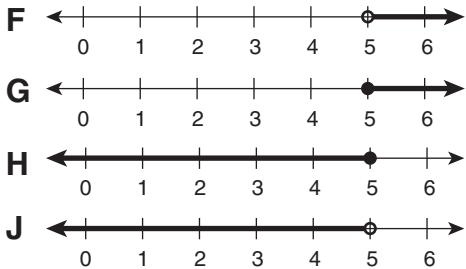
## 2

**Diagnostic Assessment****Algebra**

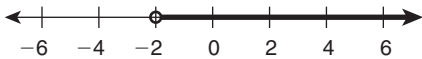
48. Identify the property shown.  
 $9 \times 7 = 7 \times 9$   
**F** Commutative Property of Multiplication  
**G** Associative Property of Multiplication  
**H** Multiplication Property of One  
**J** Multiplication Property of Zero
49. Which is the correct use of the Distributive Property to find the product  $8 \times 12$ ?  
**A**  $(8 + 10) \times (8 + 2)$   
**B**  $8 \times 12$   
**C**  $(8 \times 10) \times (8 \times 12)$   
**D**  $(8 \times 10) + (8 \times 2)$
50. Evaluate.  $27 - (6 + 12)$   
**F** 9                               **H** 27  
**G** 18                               **J** -45
51. Evaluate.  $5^2 - (8 + 4)$   
**A** -2                               **C** 13  
**B** 6                                 **D** 21
52.  $2(3.14)(4) = \underline{\hspace{2cm}}$   
**F** 25.12                       **H** 50.24  
**G** 24                               **J** 12
53. Which expression represents 12 more than  $w$ ?  
**A**  $w + 12$                    **C**  $w - 12$   
**B**  $12w$                        **D**  $w \div 12$
54. Evaluate the expression  $4x + y$  for  $x = 2$  and  $y = 5$ .  
**F** 3                               **H** 47  
**G** 13                               **J** 52
55. Simplify.  $7x + 2x - 3$   
**A**  $9x - 3$   
**B**  $14x - 3$   
**C**  $9x + 3$   
**D**  $5x - 3$
56. Which algebraic equation describes the expression "a number plus 3 is 12"?  
**F**  $\frac{n}{3} = 12$                    **H**  $3n = 12$   
**G**  $n - 3 = 12$                **J**  $n + 3 = 12$
57. Use inverse operations to solve the equation  $n + 24 = 34$ .  
**A**  $n = 1.42$                **C**  $n = 58$   
**B**  $n = 10$                    **D**  $n = 816$
58. Solve.  $a - 18 = 47$   
**F**  $a = 29$                    **H**  $a = 2.61$   
**G**  $a = 65$                    **J**  $a = 846$
59. Solve.  $8x = 88$   
**A**  $x = 10$                    **C**  $x = 80$   
**B**  $x = 11$                    **D**  $x = 704$
60. Solve.  $8h + 1 = 9$   
**F**  $h = 1$                    **H**  $h = 0$   
**G**  $h = 1.25$                **J**  $h = 10$
61. Identify the point graphed on the number line.
- 
- A** -4                               **C** 4  
**B** 3                                 **D** 5

**COURSE** **Diagnostic Assessment**  
**2 Algebra, continued**

62. Which graph is the solution to the inequality  $x - 3 \geq 2$ ?

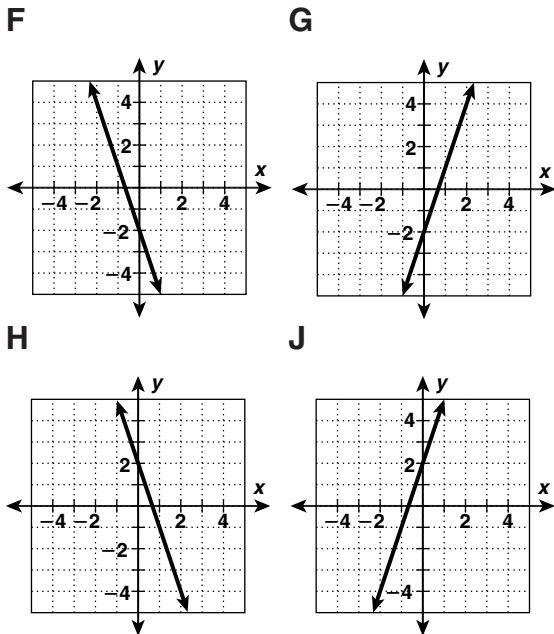


63. Which inequality represents the graph?



- A**  $x > -2$                       **C**  $x < -2$   
**B**  $x \geq -2$                       **D**  $x \leq -2$

64. Which graph corresponds to the equation  $y = 3x + 2$ ?



65. Solve for the value of  $a$ .  $\frac{a}{8} = \frac{9}{36}$

- A**  $a = 2$                       **C**  $a = 36$   
**B**  $a = 4$                       **D**  $a = 72$

66. 6 yd = \_\_\_\_\_ ft

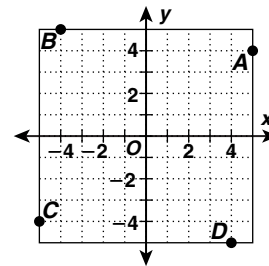
- F** 2                                      **H** 18  
**G** 3                                      **J** 24

67. Which term completes the function table?

Input	Algebraic Expression	Output
$n$	$n + 7$	
2		9
9		16
16		??

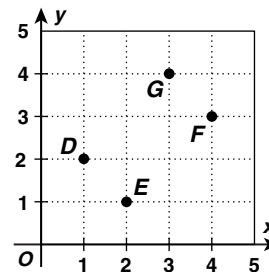
- A** 23                                      **C** 9  
**B** 25                                      **D** 20

68. What is the ordered pair for point  $B$ ?



- F** (5, 4)                                      **H** (-5, -4)  
**G** (-4, 5)                                      **J** (4, -5)

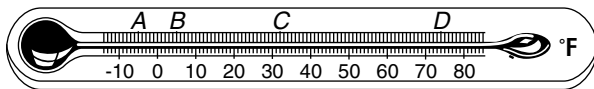
69. What is the ordered pair for point  $G$ ?



- A** (1, 2)                                      **C** (4, 3)  
**B** (2, 1)                                      **D** (3, 4)

**COURSE** **2** **Diagnostic Assessment**  
**Measuring**

70. What temperature is shown by the letter *B*?



- |              |              |
|--------------|--------------|
| <b>F</b> 32° | <b>H</b> 74° |
| <b>G</b> 5°  | <b>J</b> -5° |

71. Change to the given unit.

6 gal = \_\_\_\_\_ qt

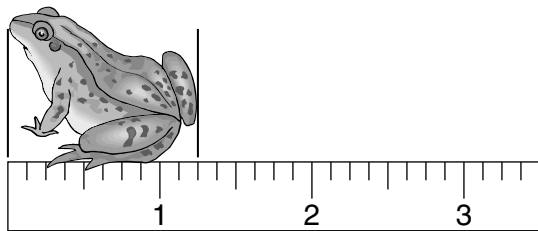
- |            |             |
|------------|-------------|
| <b>A</b> 4 | <b>C</b> 16 |
| <b>B</b> 8 | <b>D</b> 24 |

72. Change to the given unit.

17 g = \_\_\_\_\_ mg

- |                |                  |
|----------------|------------------|
| <b>F</b> 170   | <b>H</b> 17,000  |
| <b>G</b> 1,700 | <b>J</b> 170,000 |

73. Determine the length of the frog.



- |                                 |                                 |
|---------------------------------|---------------------------------|
| <b>A</b> 1 inch                 | <b>C</b> 1 $\frac{1}{8}$ inches |
| <b>B</b> 1 $\frac{1}{2}$ inches | <b>D</b> 1 $\frac{1}{4}$ inches |

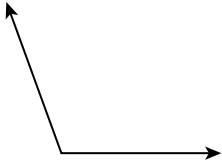
COURSE

2

# Diagnostic Assessment

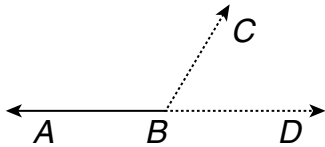
## Geometry

74. Classify the angle shown.



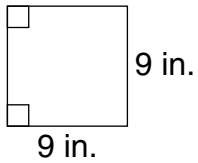
- F right                      H obtuse  
G acute                      J straight

75. Name the angle formed by the dashed rays.



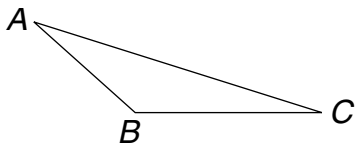
- A  $\angle CBD$                       C  $\angle ABD$   
B  $\angle CBA$                       D  $\angle ABC$

76. Identify the figure shown.



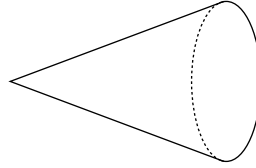
- F trapezoid                      H triangle  
G rectangle                      J square

77. Name an obtuse angle in the polygon.



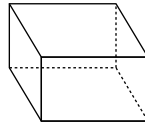
- A  $\angle ABC$                       C  $\angle BCA$   
B  $\angle CAB$                       D  $\angle ACB$

78. Identify the solid figure.



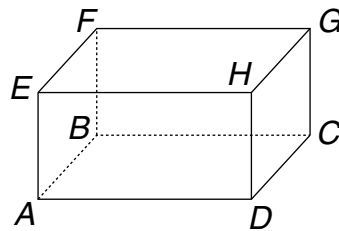
- F hexagonal prism  
G hexagonal pyramid  
H cone  
J pentagonal prism

79. Identify the number of faces, edges and vertices.



- A faces = 4, edges = 8, vertices = 10  
B faces = 6, edges = 10, vertices = 8  
C faces = 4, edges = 8, vertices = 6  
D faces = 6, edges = 12, vertices = 8

80. Which sets of lines are perpendicular to  $\overleftrightarrow{AB}$ ?



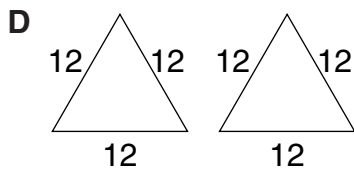
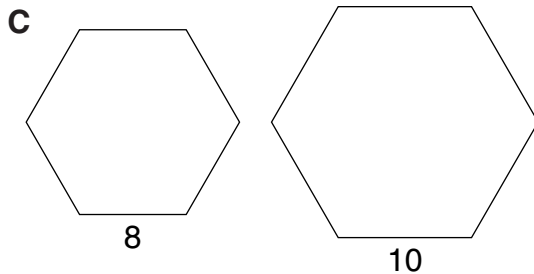
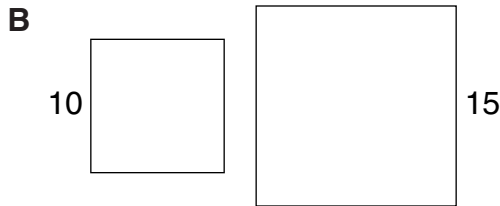
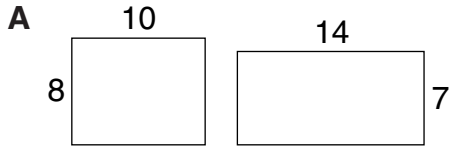
- F  $\overleftrightarrow{AE}$  and  $\overleftrightarrow{BF}$                       G  $\overleftrightarrow{AD}$  and  $\overleftrightarrow{CD}$   
H  $\overleftrightarrow{GH}$  and  $\overleftrightarrow{BC}$                       J  $\overleftrightarrow{EF}$  and  $\overleftrightarrow{CD}$



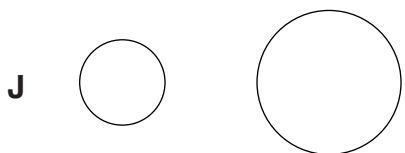
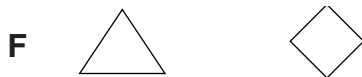
**COURSE**  
**2**

**Diagnostic Assessment**  
**Geometry, continued**

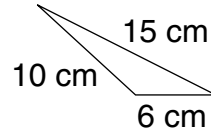
**81.** Identify the set of figures that have congruent sides.



**82.** Identify the pair of figures that appear to be similar.

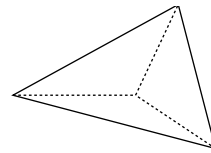


**83.** Find the perimeter of the figure.



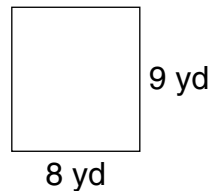
- A** 30 cm                      **C** 60 cm  
**B** 31 cm                      **D** 90 cm

**84.** Identify the figure shown.



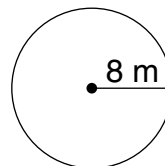
- F** triangular prism  
**G** triangular pyramid  
**H** rectangular prism  
**J** rectangular pyramid

**85.** Find the area of the figure.



- A** 72 yd<sup>2</sup>                      **C** 22 yd<sup>2</sup>  
**B** 36 yd<sup>2</sup>                      **D** 17 yd<sup>2</sup>

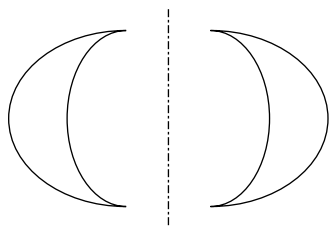
**86.** Find the area of the figure. Use 3.14 for  $\pi$ .



- F** 25.12 m<sup>2</sup>                      **H** 200.96 m<sup>2</sup>  
**G** 50.24 m<sup>2</sup>                      **J** 803.84 m<sup>2</sup>

**COURSE**  
**2** **Diagnostic Assessment**  
**Geometry, continued**

87. Identify the transformation.



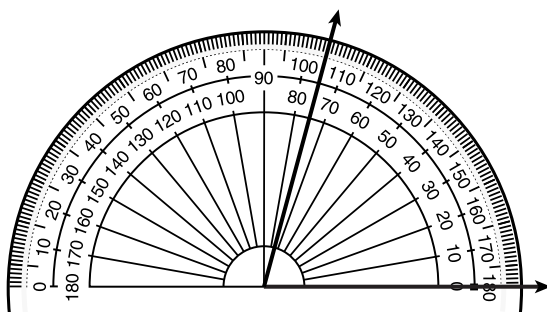
- A** translation            **C** reflection  
**B** dilation              **D** transdermal

88. Identify the number of lines of symmetry in the figure.



- F** 1                      **H** 3  
**G** 2                      **J** 4

89. What is the measure of the angle?



- A** 75°                  **C** 105°  
**B** 85°                  **D** 110°

**COURSE**  
**2**

**Diagnostic Assessment**  
**Statistics and Data Analysis**

90. Use the data in the table to answer the question.

	Boys	Girls
Burger Haven	15	10
Taco Joe's	4	6
Italian Jazz	9	12
Mr. Chicken	2	4

Which is the favorite restaurant among the girls that were surveyed?

- F** Burger Haven      **H** Italian Jazz  
**G** Taco Joe's        **J** Mr. Chicken

91. What is the range of the data set?  
96, 105, 69, 84, 68, 93, 80

- A** 96                      **C** 37  
**B** 72                      **D** 18

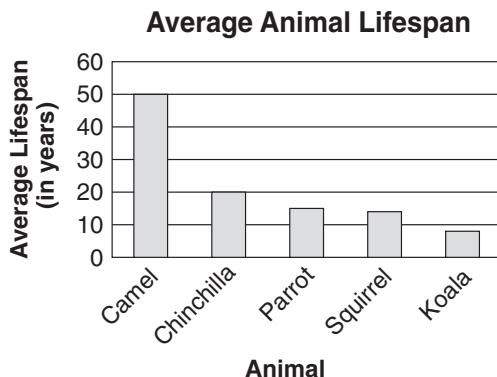
92. What is the median of the data set?  
18, 16, 14, 16, 18, 20, 16

- F** 18                      **H** 14  
**G** 16                      **J** 0

93. What is the mean of the data set?  
83, 68, 87, 74, 88

- A** 88                      **C** 83  
**B** 87                      **D** 80

94. Use the bar graph to answer the question.

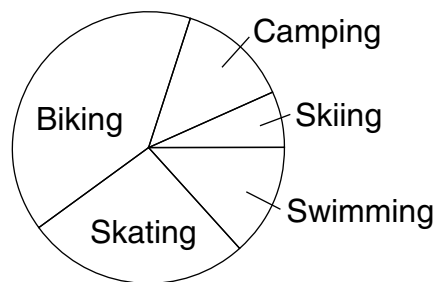


What is the average life span of a camel?

- F** 50 years              **H** 12 years  
**G** 20 years              **J** 8 years

95. Use the circle graph to answer the question.

**Favorite Activity of Middle School Students**



What is the favorite activity of middle school students?

- A** skating              **C** camping  
**B** swimming        **D** biking

**COURSE**  
**2**

**Diagnostic Assessment**  
**Statistics and Data Analysis, continued**

96. Use the stem-and-leaf plot to answer the question.

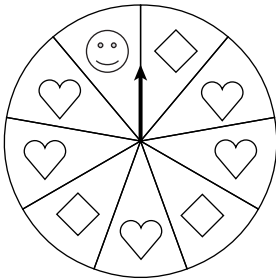
**Test Scores**

Stem	Leaves
7	0 1 3
8	2 2 3 4
9	3 3 3 7

What is the mode of the test scores?

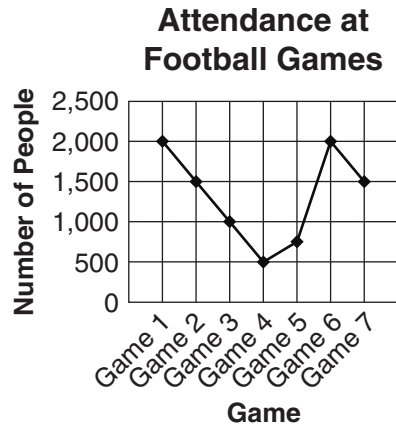
- F** 70                      **H** 93  
**G** 82                      **J** 97

97. What is the likelihood of spinning a star?



- A** certain                      **C** likely  
**B** impossible                **D** unlikely

98. Use the graph to answer the question.



How many more people attended Game 1 than Game 4?

- F** 500                      **H** 1,500  
**G** 1,000                **J** 2,000