

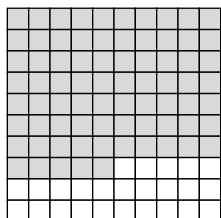
**COURSE****1****Diagnostic Assessment****Number and Quantitative Reasoning**

- Identify the place value of the underlined digit 6,704,456.  
**A** millions  
**B** hundred thousands  
**C** ten thousands  
**D** thousands
- Which is three million, two hundred fifty-two thousand, twelve written in standard form?  
**F** 3,250,112  
**G** 3,252,012  
**H** 3,000,250,012  
**J** 3,250,000,112
- Round 48,529 to the nearest ten.  
**A** 48,520                      **C** 48,530  
**B** 48,525                      **D** 48,600
- Which statement is true?  
**F**  $72,772 > 77,277$   
**G**  $84,563 < 84,653$   
**H**  $3,061 > 3,072$   
**J**  $3,245 > 4,999$
- Which set of numbers is ordered from least to greatest?  
**A** 83, 71, 53, 35, 17  
**B** 17, 35, 53, 71, 83  
**C** 17, 53, 35, 71, 83  
**D** 35, 53, 17, 71, 83
- Identify the number sets that contain the number 15.  
**F** counting, whole, even  
**G** counting, whole, odd  
**H** counting, whole, factor of 4  
**J** counting, even
- Which list contains the first three multiples of the number 7?  
**A** 7, 8, 9  
**B** 7, 14, 21  
**C** 7, 17, 27  
**D** 7, 70, 700
- Which list contains all the factors of 16?  
**F** 1, 16, 32  
**G** 1, 2, 4, 8, 16  
**H** 1, 16  
**J** 1, 2, 4, 6, 8, 16
- Which number is not prime?  
**A** 7                                      **C** 17  
**B** 11                                    **D** 21
- Which number is prime?  
**F** 25                                    **H** 61  
**G** 39                                    **J** 72
- Evaluate  $15^2$ .  
**A** 13                                    **C** 152  
**B** 30                                    **D** 225
- Find the value of  $5^3$ .  
**F** 15                                    **H** 125  
**G** 53                                    **J** 1125
- Find the next three numbers in the pattern.  
16, 20, 24, 28...  
**A** 30, 32, 34  
**B** 32, 36, 40  
**C** 31, 33, 35  
**D** 46, 92, 184

**COURSE** **Diagnostic Assessment**

**1** **Number and Quantitative Reasoning, continued**

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



- F  $\frac{1}{4}$                       H  $\frac{4}{5}$   
 G 0.25                      J 0.75

15. What is 92.15 in word form?

- A nine, two, one five  
 B ninety-two and fifteen hundredths  
 C ninety-two and one-five thousandths  
 D ninety-two and fifteen tenths

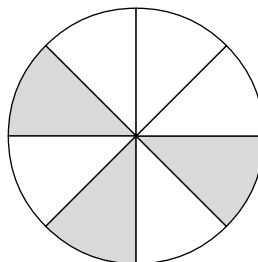
16. Round 27.62 to the nearest whole number.

- F 27                      H 27.6  
 G 28                      J 28.1

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

- A 14.2, 14.1, 12.3, 12.1  
 B 14.1, 14.2, 12.3, 12.1  
 C 12.1, 12.3, 14.2, 14.1  
 D 12.1, 12.3, 14.1, 14.2

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



- F  $\frac{2}{3}$                       H  $\frac{3}{8}$   
 G  $\frac{1}{2}$                       J  $\frac{3}{7}$

19. Simplify  $\frac{12}{16}$ .

- A  $\frac{1}{3}$                       C  $\frac{1}{2}$   
 B  $\frac{2}{3}$                       D  $\frac{3}{4}$

20. Round  $\frac{1}{9}$  to the nearest benchmark fraction.

- F 0                      H 1  
 G  $\frac{1}{2}$                       J cannot round

21. Write  $\frac{13}{3}$  as a mixed number.

- A  $4\frac{1}{4}$                       C  $5\frac{1}{2}$   
 B  $4\frac{1}{3}$                       D  $\frac{3}{13}$

22. Write an improper fraction equal to  $2\frac{1}{4}$ .

- F  $\frac{21}{4}$                       H  $\frac{3}{4}$   
 G  $\frac{9}{4}$                       J  $\frac{9}{3}$

**COURSE** **Diagnostic Assessment**

**1** **Number and Quantitative Reasoning, continued**

23. Find a common denominator for

$$\frac{1}{8} + \frac{1}{12}$$

- A 12                                  C 24  
 B 16                                  D 76

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

$$\frac{2}{3} = \frac{?}{15}$$

- F 5                                      H 15  
 G 10                                  J 20

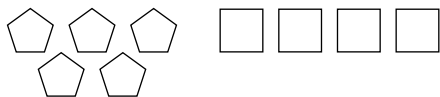
25. Compare  $3\frac{1}{4}$    $3\frac{1}{5}$ .

- A >                                  C =  
 B <

26. Change  $\frac{7}{8}$  to a decimal.

- F 0.07                              H 0.875  
 G 0.78                              J 7

27. Which is the ratio of pentagons to squares?

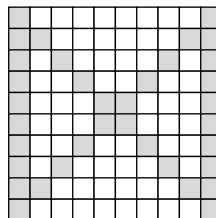


- A 5:4                                  C 5:1  
 B 4:5                                  D 1:5

28. Simplify: 10 oranges to 2 lemons.

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

29. Which percent can be used to describe the shaded part of the grid?



- A 16%                              C 36%  
 B 32%                              D 64%

30. Change 0.15 to a percent.

- F 0.15%                          H 15%  
 G 1.5%                            J 1,500%

31. Change  $\frac{40}{50}$  to a percent.

- A 20%                              C 50%  
 B 40%                              D 80%

32. Which statement is true?

- F  $\frac{1}{2} < 0.25$   
 G  $75\% > \frac{3}{5}$   
 H  $\frac{1}{2} < 25\%$   
 J  $50\% = 5.0$

33. Which integer represents a loss of \$12?

- A -\$12  
 B \$12  
 C \$0  
 D -\$120

**COURSE**  
**1** **Diagnostic Assessment**  
**Operations**

34. Find the quotient.  $6\overline{)70}$   
**F** 10 r 4                    **H** 11 r 4  
**G** 10 r 10                    **J** 12

35. Find the product.  $4 \times 4 \times 4$   
**A** 12                            **C** 176  
**B** 64                            **D** 444

36. Multiply.  $9 \times 8$   
**F** 17                            **H** 72  
**G** 64                            **J** 98

37.  $\frac{64}{100} = ?$   
**A** 6.4                            **C** 0.064  
**B** 0.64                        **D** 64

38. Divide.  $92 \div 4$   
**F** 13                            **H** 22  
**G** 21                            **J** 23

39. Divide  $8\overline{)140}$ . Write any remainder as a decimal.  
**A** 16.3                        **C** 132  
**B** 17.5                        **D** 1,120

40. Multiply.  $\begin{array}{r} 6.8 \\ \times 0.5 \\ \hline \end{array}$   
**F** 3.4                            **H** 34  
**G** 7.3                            **J** 340

41. Multiply.  $100 \times 3.6$   
**A** 3.6                            **C** 360  
**B** 36                            **D** 3,600

42. Add.  $\begin{array}{r} \frac{5}{8} \\ + \frac{1}{4} \\ \hline \end{array}$

- F**  $\frac{5}{32}$                             **H**  $\frac{3}{4}$   
**G**  $\frac{1}{2}$                             **J**  $\frac{7}{8}$

43.  $\frac{3}{4} - \frac{1}{4}$

- A** 0                            **C**  $\frac{3}{4}$   
**B**  $\frac{1}{2}$                             **D** 2

44. Multiply  $\frac{1}{2} \times \frac{4}{5}$ . Write the answer in simplest form.

- F**  $\frac{2}{5}$                             **H**  $\frac{5}{7}$   
**G**  $\frac{3}{5}$                             **J** 1

45. Multiply.  $\frac{1}{4} \times 8$

- A** 1                            **C** 4  
**B** 2                            **D** 32

46. What is 25% of 80?

- F** 20                            **H** 60  
**G** 40                            **J** 75

47. Subtract.  $(-12) - 2$

- A** -14                        **C** 10  
**B** -10                        **D** 14

**COURSE**  
**1** **Diagnostic Assessment**  
**Algebra**

48. Identify the property shown.  
 $8 \times 1 = 8$   
**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  $3 \times 11$ ?  
**A**  $(3 + 10) \times (3 + 1)$   
**B**  $3 \times 11$   
**C**  $(3 \times 10) \times (3 \times 1)$   
**D**  $(3 \times 10) + (3 \times 1)$

50. Evaluate.  $10 - (3 + 5)$   
**F** -5                      **H** 15  
**G** 2                          **J** 18

51. Evaluate.  $3^2 + (9 - 1)$   
**A** -2                      **C** 16  
**B** 12                       **D** 17

52.  $2(5.2)(3) = \underline{\hspace{2cm}}$   
**F** 10.12                  **H** 26  
**G** 13.4                    **J** 31.2

53. Which expression represents the product of 6 and a number?  
**A**  $6w$   
**B**  $w + 6$   
**C**  $w - 6$   
**D**  $w \div 6$

54. Evaluate the expression  $3x + 2$  for  $x = 4$ .  
**F** 9                              **H** 24  
**G** 14                            **J** 36

55. Simplify.  $3x + 4x + 6$   
**A**  $12x + 6$                   **C**  $7x + 6$   
**B**  $13x$                         **D**  $13 + x$

56. Which algebraic equation describes the expression "6 plus a number is 8"?  
**F**  $6n = 8$                       **H**  $n + 6 = 8$   
**G**  $6 \div n = 8$                   **J**  $n - 6 = 8$

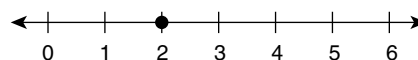
57. Use inverse operations to solve the equation.  $n + 10 = 16$   
**A**  $n = -6$                       **C**  $n = 6$   
**B**  $n = 1.\bar{6}$                       **D**  $n = 26$

58. Solve.  $a - 8 = 23$   
**F**  $a = 2.875$                   **H**  $a = 31$   
**G**  $a = 15$                        **J**  $a = 184$

59. Solve.  $7x = 49$   
**A**  $x = 7$                         **C**  $x = 56$   
**B**  $x = 42$                       **D**  $x = 343$

60. Solve.  $3h - 2 = 4$   
**F**  $h = -2$                       **H**  $h = 2$   
**G**  $h = 0.\bar{6}$                       **J**  $h = 3$

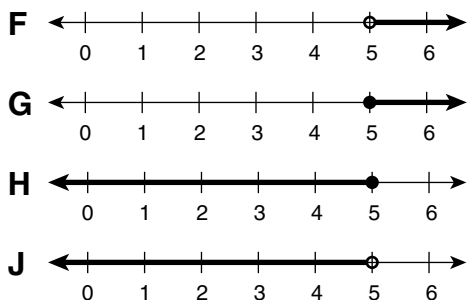
61. Identify the point graphed on the number line.



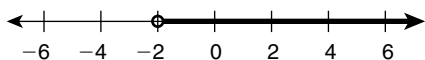
- A** -2                              **C** 3  
**B** 2                                **D** 4

**COURSE** **Diagnostic Assessment**  
**1 Algebra, continued**

62. Which graph is the solution to the inequality  $x + 3 \geq 8$ ?

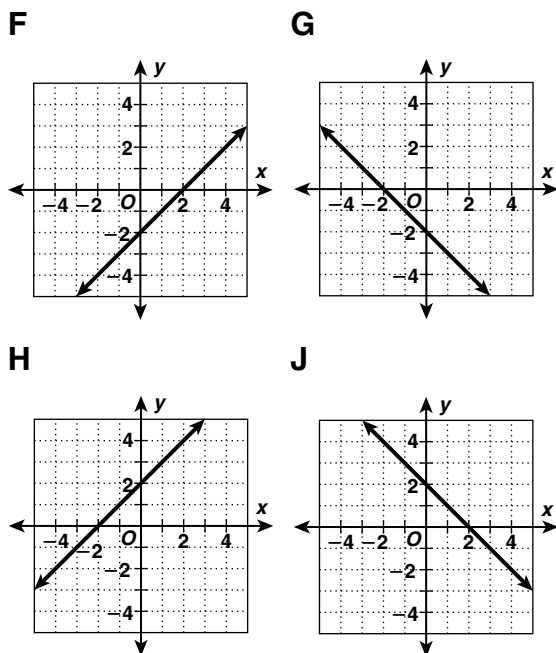


63. Which inequality represents the graph?



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

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



65. Solve for the value of  $a$ .  $\frac{a}{10} = \frac{2}{5}$

- A**  $a = 25$                       **C**  $a = 4$   
**B**  $a = 15$                       **D**  $a = 2$

66. 24 in. = \_\_\_\_\_ ft

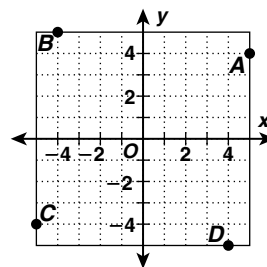
- F** 1                                      **H** 3  
**G** 2                                      **J** 6

67. Which term completes the function table?

Input	Algebraic Expression	Output
$n$	$3n$	
2		6
4		12
6		??

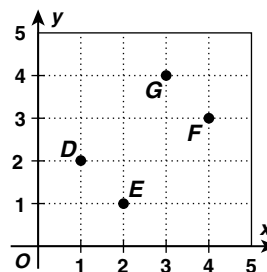
- A** 14                                      **C** 26  
**B** 18                                      **D** 36

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



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

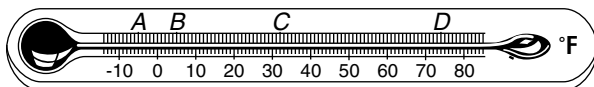
69. What is the ordered pair for point  $F$ ?



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

**COURSE 1** **Diagnostic Assessment**  
**Measuring**

70. What temperature is shown by the letter C?



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

71. Change to the given unit.

8 c = \_\_\_\_\_ pt

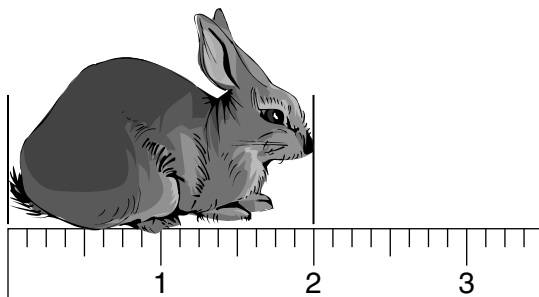
- |            |             |
|------------|-------------|
| <b>A</b> 2 | <b>C</b> 16 |
| <b>B</b> 4 | <b>D</b> 24 |

72. Change to the given unit.

17,000 mg = \_\_\_\_\_ g

- |                |              |
|----------------|--------------|
| <b>F</b> 1,700 | <b>H</b> 17  |
| <b>G</b> 170   | <b>J</b> 1.7 |

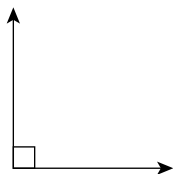
73. What is the length of the rabbit?



- |                                 |                                 |
|---------------------------------|---------------------------------|
| <b>A</b> 1 inch                 | <b>C</b> 1 $\frac{3}{4}$ inches |
| <b>B</b> 1 $\frac{1}{4}$ inches | <b>D</b> 2 inches               |

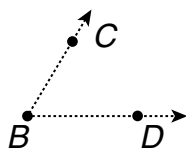
**COURSE**  
**1** **Diagnostic Assessment**  
**Geometry**

74. Classify the angle shown.



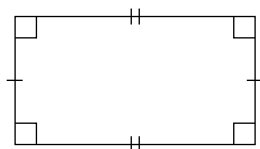
- F right                      H obtuse  
G acute                      J straight

75. Name the angle formed by the dashed rays.



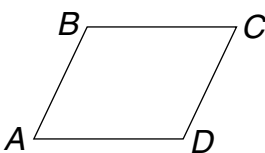
- A  $\angle CBD$                       C  $\angle BCD$   
B  $\angle BCA$                       D  $\angle DCB$

76. Identify the figure shown.



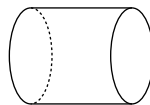
- F trapezoid                      H rhombus  
G rectangle                      J square

77. Name an acute angle in the polygon.



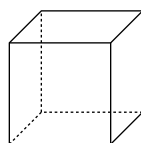
- A  $\angle ABC$                       C  $\angle BCD$   
B  $\angle CAB$                       D  $\angle ACB$

78. Identify the solid figure.



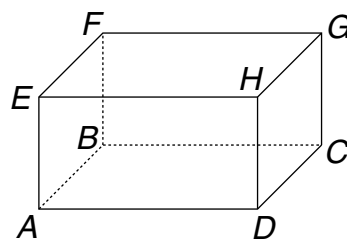
- F rectangular prism  
G rectangular pyramid  
H cone  
J cylinder

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 line intersects  $\overleftrightarrow{AB}$ ?

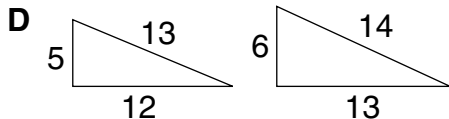
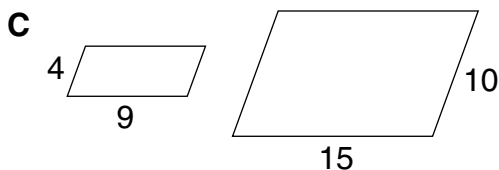
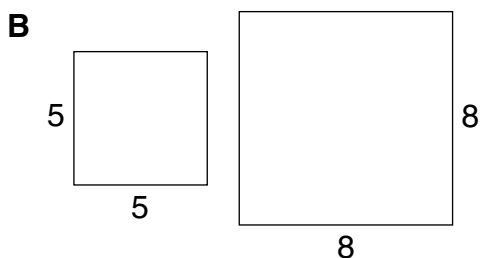
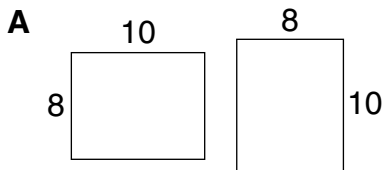


- F  $\overleftrightarrow{AD}$                       G  $\overleftrightarrow{CD}$   
H  $\overleftrightarrow{FG}$                       J  $\overleftrightarrow{HG}$

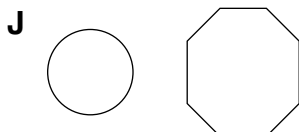
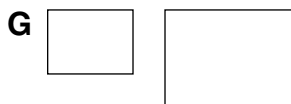
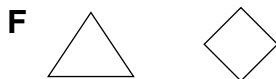


**COURSE**  
**1** **Diagnostic Assessment**  
**Geometry, continued**

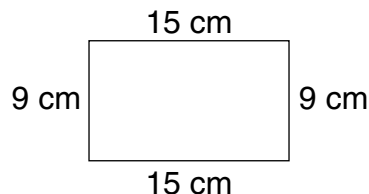
81. Identify the set of figures that have congruent sides.



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

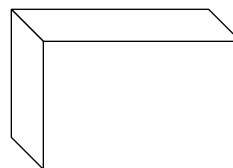


83. Find the perimeter of the figure.



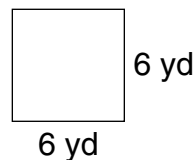
- A** 24 cm                      **C** 90 cm  
**B** 48 cm                      **D** 96 cm

84. Identify the figure shown.



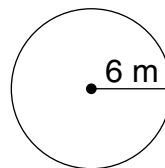
- F** triangular prism  
**G** triangular pyramid  
**H** rectangular prism  
**J** rectangular pyramid

85. Find the area of the figure.



- A** 12 yd<sup>2</sup>                      **C** 36 yd<sup>2</sup>  
**B** 24 yd<sup>2</sup>                      **D** 72 yd<sup>2</sup>

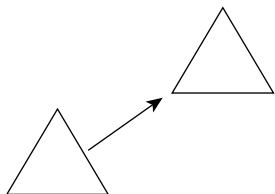
86. Find the area of the figure. Use 3.14 for  $\pi$ .



- F** 18.84 m<sup>2</sup>                      **H** 113.04 m<sup>2</sup>  
**G** 37.68 m<sup>2</sup>                      **J** 452.16 m<sup>2</sup>

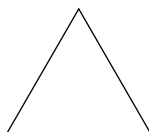
**COURSE 1 Diagnostic Assessment**  
**1 Geometry, continued**

87. Identify the transformation.



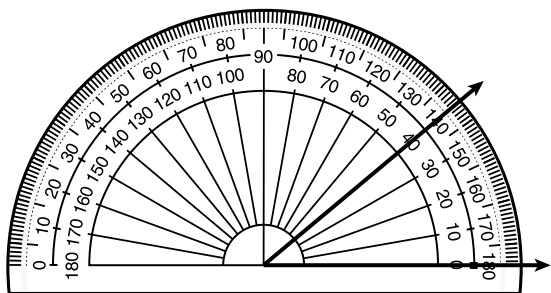
- A translation
- B rotation
- C reflection
- D transdermal

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



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

89. What is the measure of the angle?



- A 40°
- B 50°
- C 140°
- D 180°

**COURSE**  
**1**

## Diagnostic Assessment

### Statistics and Data Analysis

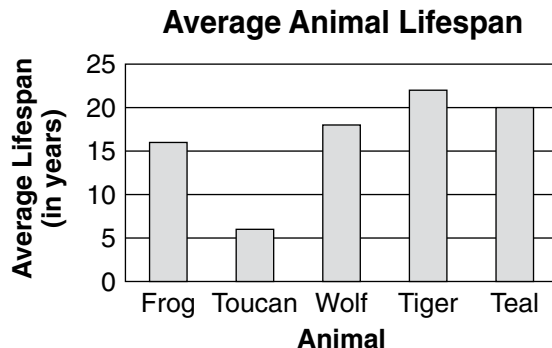
90. Use the data in the table to answer the question.

	Boys	Girls
Math	7	5
English	4	8
Art	2	11
Science	13	9

Which is the favorite class among boys surveyed?

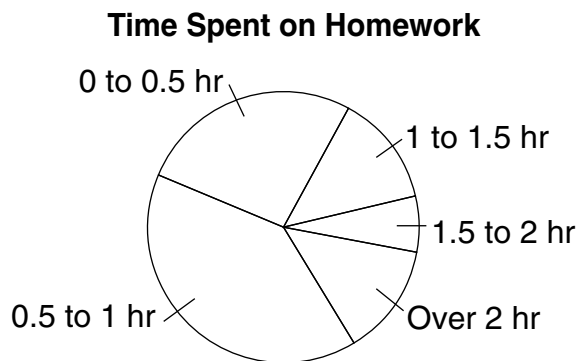
- F** Math                      **H** Art  
**G** English                    **J** Science
91. What is the range of the data set?  
83, 68, 87, 74, 88
- A** 20                          **C** 80  
**B** 68                          **D** 83
92. What is the median of the data set?  
8, 6, 4, 6, 8, 2
- F** 8                              **H** 4  
**G** 6                              **J** 2
93. What is the mean of the data set?  
8, 12, 7, 16, 10, 7
- A** 6                              **C** 9  
**B** 7                              **D** 10

94. Use the bar graph to answer the question.



What is the average lifespan of a teal?

- F** 7 years                      **H** 20 years  
**G** 17 years                    **J** 25 years
95. Use the circle graph to answer the question.



What is the most common amount of time spent on homework?

- A** 0 to  $\frac{1}{2}$  hour              **C**  $1\frac{1}{2}$  to 2 hours  
**B**  $\frac{1}{2}$  to 1 hour                **D** over 2 hours

**COURSE**

**Diagnostic Assessment**

**1**

**Statistics and Data Analysis, continued**

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

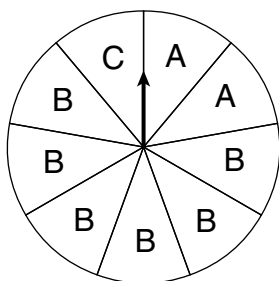
**Test Scores**

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

What is the median of the test scores?

- F 70
- G 82
- H 83
- J 97

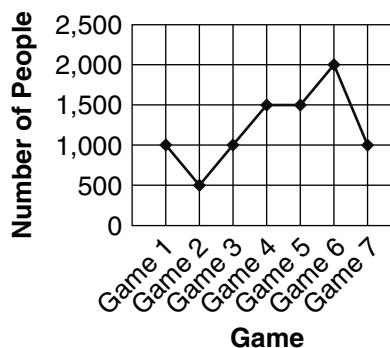
97. What is the likelihood of spinning the letter B?



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

98. How many more people attended Game 4 than Game 2?

**Attendance at Basketball Games**



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