Name _____ Date _____ Class _____

COURSE 1

Diagnostic Assessment

Number and Quantitative Reasoning

1. Identify the place value of the underlined digit 6,70<u>4</u>,456.

A millions

B hundred thousands

C ten thousands

D thousands

2. 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

3. Round 48,529 to the nearest ten.

A 48,520 **C** 48,530

B 48,525 **D** 48,600

4. Which statement is true?

F 72,772 > 77,277

G 84,563 < 84,653

H 3,061 > 3,072

J 3,245 > 4,999

5. 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

6. Identify the number set that contains the number 15.

F counting, whole, even

G counting, whole, odd

H counting, whole, factor of 4

J counting, even

7. 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

8. 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

9. Which number is not prime?

A 7 **C** 17

B 11 **D** 21

10. Which number is prime?

F 25 **H** 61

G 39 **J** 72

11. Evaluate 15^2.

A 13 **C** 152

B 30 **D** 225

12. Find the value of 5^3.

F 15 **H** 125

G 53 **J** 1125

13. 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

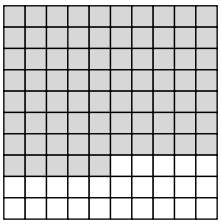
Name _____ Date _____ Class _____

COURSE 1

Diagnostic Assessment

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?

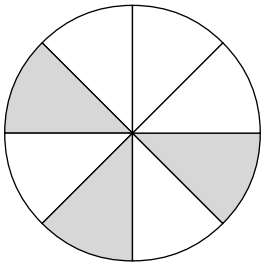
A 14.2, 14.1, 12.3, 12.1

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** $\frac{9}{3}$

Name _____ Date _____ Class _____

Diagnostic Assessment

COURSE 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 $3\frac{1}{4} \square 3\frac{1}{5}$.

A $>$ **C** $=$

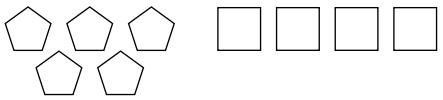
B $<$

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

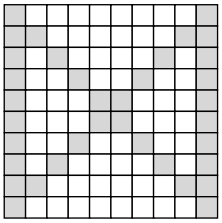
B 4:5 **D** 1:5

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 $-\$120$

Name _____ Date _____ Class _____

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. 9×8

F 17 **H** 72
G 64 **J** 98

37. $\frac{64}{100} = \frac{?}{}$

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. 100×3.6

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

Name _____ Date _____ Class _____

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 3×11?

A $(3 + 10) \times (3 + 1)$

B 3×11

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. $2(5.2)(3) =$ _____

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 $n = 1.\overline{6}$ **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** $x = 56$

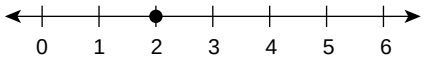
B $x = 42$ **D** $x = 343$

60. Solve. $3h - 2 = 4$

F $h = -2$ **H** $h = 2$

G $h = 0.\overline{6}$ **J** $h = 3$

61. Identify the point graphed on the number line.



A -2 **C** 3

B 2 **D** 4

Name _____ Date _____ Class _____

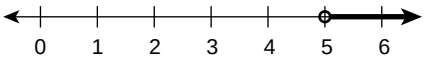
COURSE 1

Diagnostic Assessment

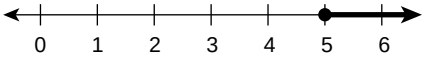
Algebra, continued

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

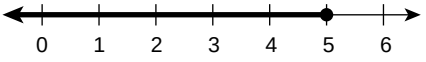
F



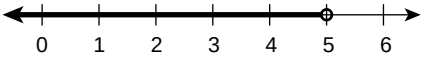
G



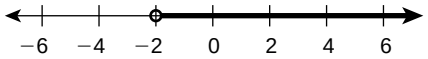
H



J



63. Which inequality represents the graph?

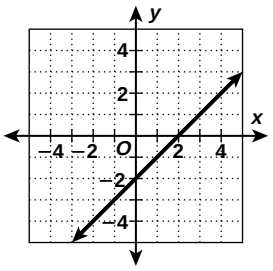


A $x > -2$ **C** $x < -2$

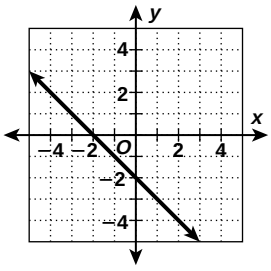
B $x \geq -2$ **D** $x \leq -2$

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

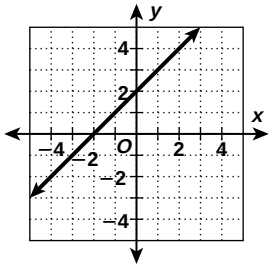
F



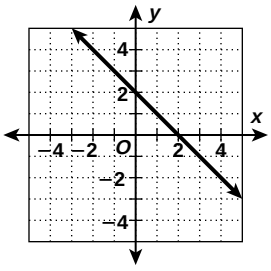
G



H



J



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

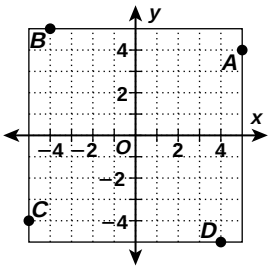
67. Which term completes the function table?

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

A 14 **C** 26

B 18 **D** 36

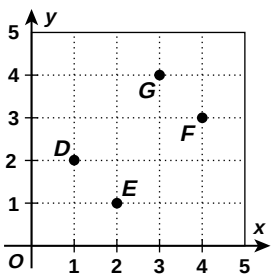
68. What is the ordered pair for point D?



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)

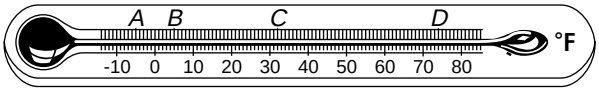
Name _____ Date _____ Class _____

Diagnostic Assessment

COURSE 1

Measuring

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



F 32°
H 74°
G 5°
J −5°

71. Change to the given unit.

8 c = _____ pt

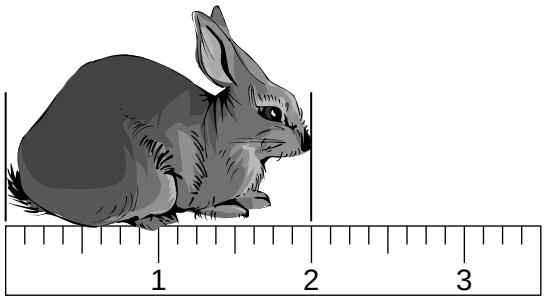
A 2
C 16
B 4
D 24

72. Change to the given unit.

17,000 mg = _____ g

F 1,700
H 17
G 170
J 1.7

73. What is the length of the rabbit?



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

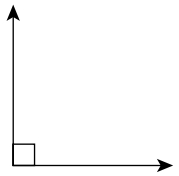
Name _____ Date _____ Class _____

COURSE 1

Diagnostic Assessment

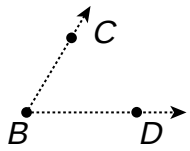
Geometry

74. Classify the angle shown.



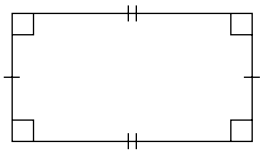
F right
G acute
H obtuse
J straight

75. Name the angle formed by the dashed rays.



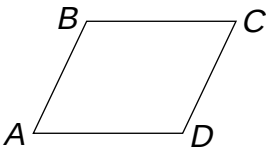
A $\angle CBD$
B $\angle BCA$
C $\angle BCD$
D $\angle DCB$

76. Identify the figure shown.



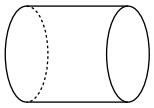
F trapezoid
G rectangle
H rhombus
J square

77. Name an acute angle in the polygon.



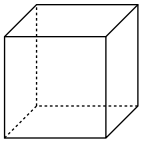
A $\angle ABC$
B $\angle CAB$
C $\angle BCD$
D $\angle ACB$

78. Identify the solid figure.



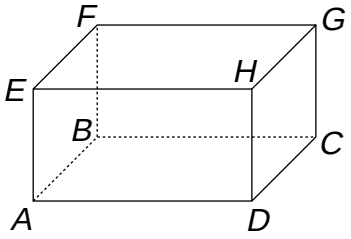
F rectangular prism
G rectangular pyramid
H cone
J cylinder

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 $\overleftrightarrow{HG}$

Name _____ Date _____ Class _____

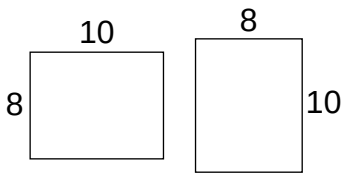
COURSE 1

Diagnostic Assessment

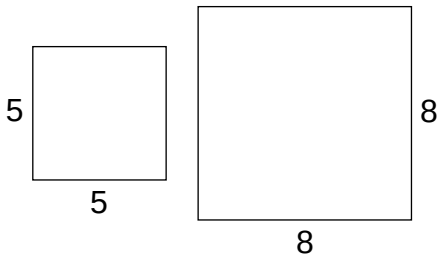
Geometry, continued

81. Identify the set of figures that are congruent.

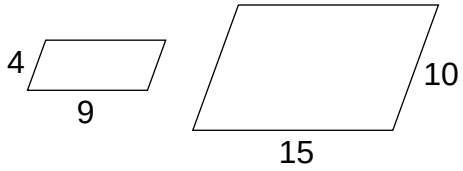
A



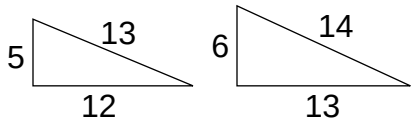
B



C

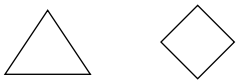


D

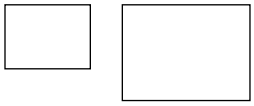


82. Identify the pair of figures that appear to be similar.

F

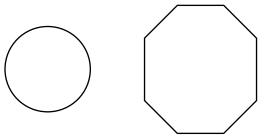


G

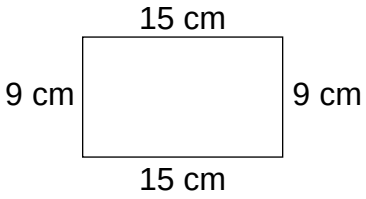


H

J

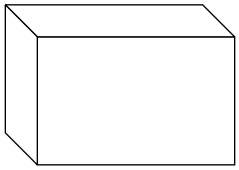


83. Find the perimeter of the figure.



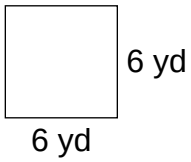
A 24 cm
B 48 cm
C 90 cm
D 96 cm

84. Identify the figure shown.



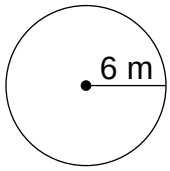
F triangular prism
G triangular pyramid
H rectangular prism
J rectangular pyramid

85. Find the area of the figure.



A 12 yd^2
B 24 yd^2
C 36 yd^2
D 72 yd^2

86. Find the area of the figure.



F 18.84 m^2
G 37.68 m^2
H 113.04 m^2
J 452.16 m^2

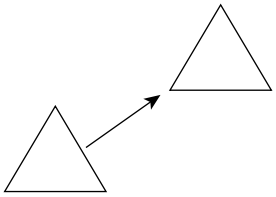
Name _____ Date _____ Class _____

COURSE 1

Diagnostic Assessment

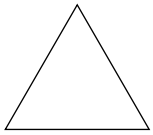
Geometry, continued

87. Identify the transformation.



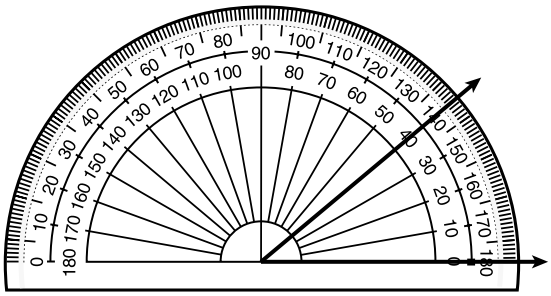
A translation
B rotation
C reflection
D transdermal

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°

Name _____ Date _____ Class _____

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

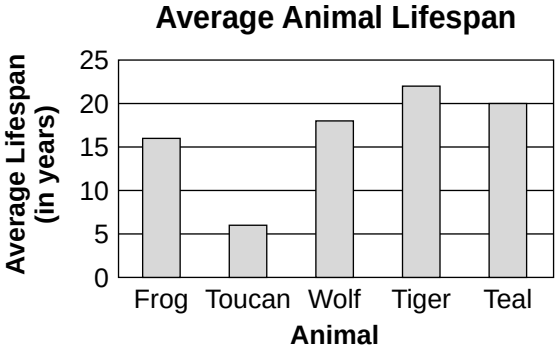
G 6 **J** 2

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.

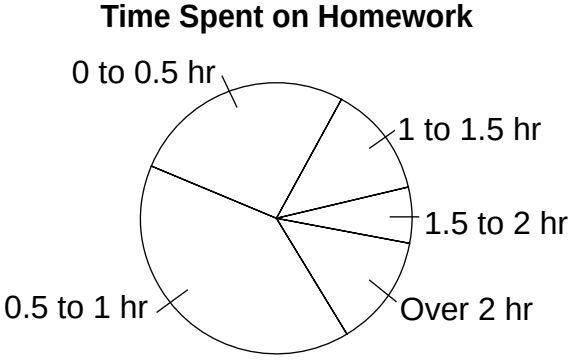


What is the average lifespan of a teal?

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

Name _____ Date _____ Class _____

COURSE 1 Diagnostic Assessment

Statistics and Data Analysis, continued

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

Test Scores

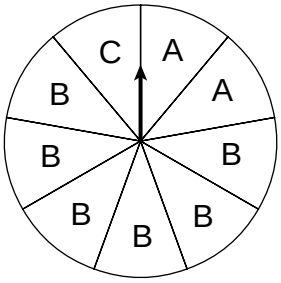
Stem	Leaves
7	0 1 3
8	2 2 3 4
9	3 3 3 7

What is the median of the test scores?

F 70 **H** 83

G 82 **J** 97

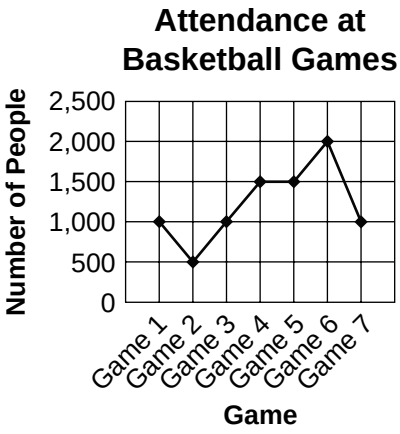
97. What is the likelihood of spinning the letter B?



A certain **C** likely

B impossible **D** unlikely

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



F 500 **H** 1,500

G 1,000 **J** 2,000

COURSE 1

Diagnostic Assessment

Answers

Number and Quantitative Reasoning

1. D
2. G
3. C
4. G
5. B
6. G
7. B
8. G
9. D
10. H
11. D
12. H
13. B
14. J
15. B
16. G
17. A
18. H
19. D
20. F
21. B
22. G
23. C
24. G
25. A
26. H
27. A
28. H
29. C
30. H
31. D
32. G
33. A

Operations

34. H
35. B
36. H
37. B
38. J
39. B
40. F
41. C
42. J
43. B
44. F
45. B
46. F
47. A

Algebra

48. H
49. D
50. G
51. D
52. J
53. A
54. G
55. C
56. H
57. C
58. H
59. A
60. H
61. B
62. G
63. A
64. H
65. C
66. G
67. B
68. J
69. C

Measuring

70. F
71. B
72. H
73. D

Goemetry

74. F
75. A
76. G
77. C
78. J
79. D
80. F
81. A
82. G
83. B
84. H
85. C
86. H
87. A
88. H
89. A

Statistics and Data Analysis

90. J
91. A
92. G
93. D
94. H
95. B
96. H
97. C
98. G