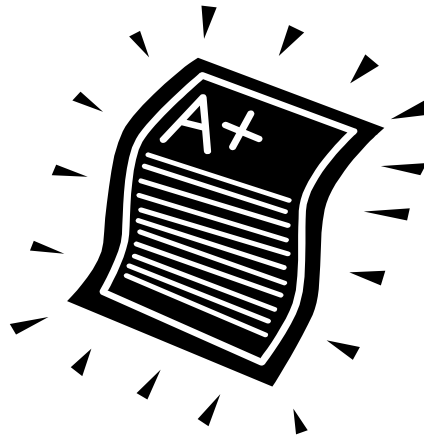


9th Grade Mathematics Assessment

Name: _____
Date: _____
School: _____
District: _____

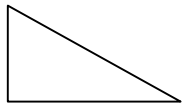


*Increasing Achievement for Schools,
Teachers, & Students*

Post Test

Mathematics Reference Sheet

Area



Triangle

$$A = \frac{1}{2}bh$$



Rectangle

$$A = lw$$



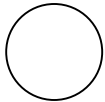
Trapezoid

$$A = \frac{1}{2}h(b_1 + b_2)$$



Parallelogram

$$A = bh$$



Circle

$$A = \pi r^2$$

Key

b = base

h = height

l = length

w = width

ℓ = slant height

$S.A.$ = surface area

d = diameter

r = radius

A = area

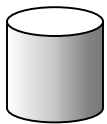
C = circumference

V = volume

Use 3.14 or $\frac{22}{7}$ for π .

Circumference

$$C = \pi d = 2\pi r$$



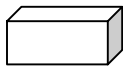
Right Circular Cylinder

Volume

$$V = \pi r^2 h$$

Total Surface Area

$$S.A. = 2\pi r h + 2\pi r^2$$



Rectangular Solid

$$V = lwh$$

$$S.A. = 2(lw) + 2(hw) + 2(lh)$$



Sphere

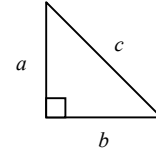
$$V = \frac{4}{3}\pi r^3$$

$$S.A. = 4\pi r^2$$

In a polygon, the sum of the measures of the interior angles is equal to $180(n - 2)$, with n representing the number of sides.

In a regular polygon, the measure of an interior angle is equal to $\frac{180(n - 2)}{n}$.

Pythagorean theorem: $c^2 = a^2 + b^2$



$$y = mx + b$$

Slope-intercept form of an equation of a line, where $m = \text{slope}$ and $b = \text{the } y\text{-intercept}$.

$$d = rt$$

Distance, rate, time formula, where $d = \text{distance}$, $r = \text{rate}$, $t = \text{time}$.

$$I = prt$$

Simple interest formula, where $p = \text{principal}$, $r = \text{rate}$, $t = \text{time}$.

Conversions

1 yard = 3 feet = 36 inches

1 mile = 1,760 yards = 5,280 feet

1 acre = 43,560 square feet

1 hour = 60 minutes

1 minute = 60 seconds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 liter = 1000 milliliters = 1000 cubic centimeters

1 meter = 100 centimeters = 1000 millimeters

1 kilometer = 1000 meters

1 gram = 1000 milligrams

1 kilogram = 1000 grams

1 pound = 16 ounces

1 ton = 2,000 pounds

Begin with Question #45 on Your Answer Sheet for the Math Portion of the Assessment.

45. The temperature in degrees Celsius, C , is $\frac{5}{9}$ of the difference between the temperature in degrees Fahrenheit, F , and the constant is 32. Which equation best represents this relationship?

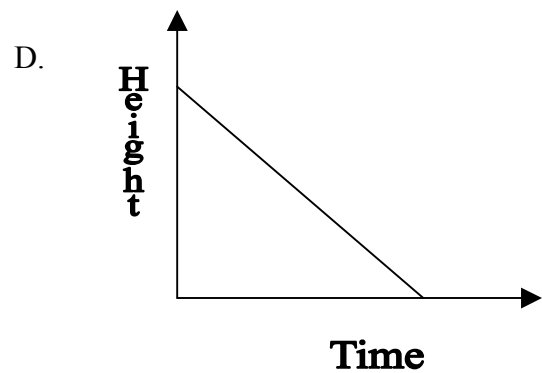
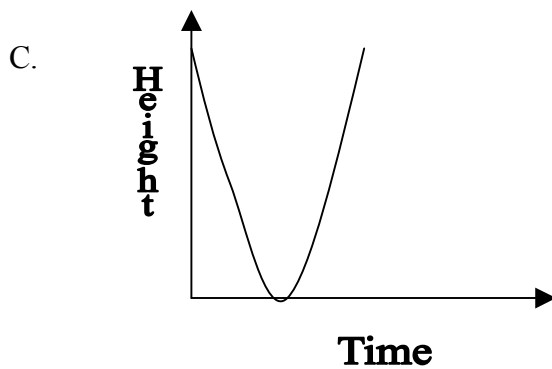
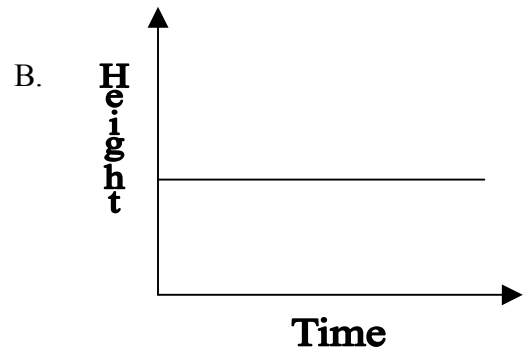
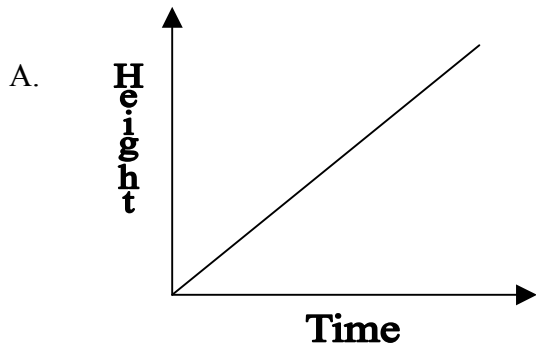
A. $C = \frac{5}{9} - (F + 32)$

B. $C = \frac{5}{9} (F + 32)$

C. $C = \frac{5}{9} (F - 32)$

D. $C = \frac{5}{9} - F + 32$

46. Which graph BEST represents the relationship between the height of a burning candle and the amount of time that passes as the candle burns?

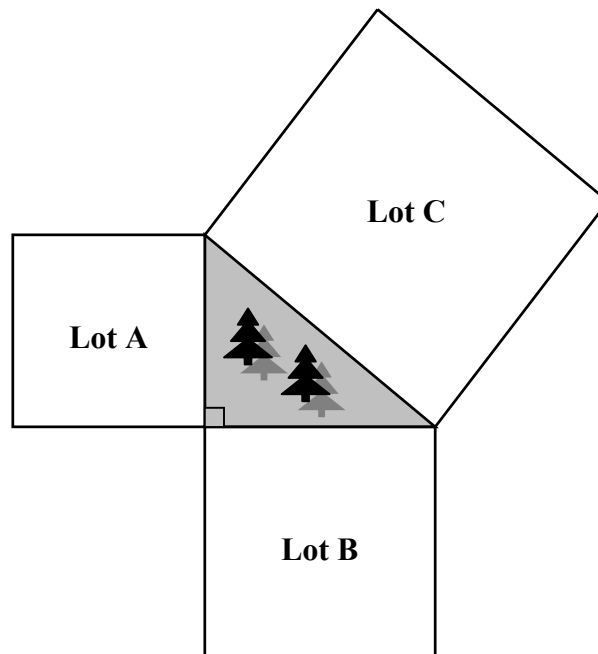


47. A cylindrical water tank has a radius of 2.8 feet and a height of 5.6 feet. The water tank is filled to the top. If water can be pumped out at a rate of 36 cubic feet per minute, about how long will it take to empty the water tank?

- A. 3 hours
- B. 2 hours
- C. 4 minutes
- D. 1 minute

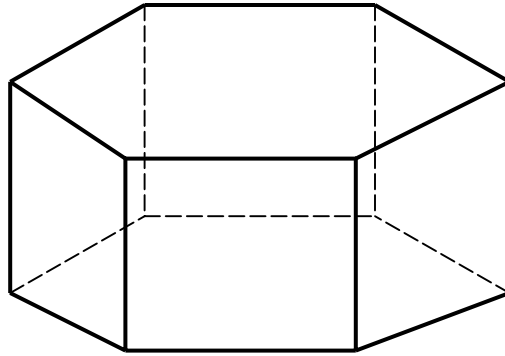
48. Jenni is an Algebra I student who believes that $xy^2 = (xy)^2$. Renee informs Jenni that this theory is not always true. Which pair of values for x and y could Renee use to disprove Jenni's theory?
- A. $x = 0$ and $y = 2$
 - B. $x = 1$ and $y = 2$
 - C. $x = 2$ and $y = 0$
 - D. $x = 2$ and $y = 1$

The drawing below shows 3 square parking lots that enclose a grassy area shaped like a right triangle.



49. If **Lot A's** perimeter is 300 yards and **Lot B's** perimeter is 400 yards, what is the perimeter of **Lot C**?
- A. 500 yards
 - B. 700 yards
 - C. 125 yards
 - D. 2000 yards

The drawing below illustrates a 3-dimensional solid.



50. Which best represents the shape of the solid when viewed from the top?
- A. pentagon
 - B. hexagon
 - C. heptagon
 - D. octagon
51. Tony and Micah each built a rectangular garden. Tony's garden is twice as long and twice as wide as Micah's garden. If the area of Micah's garden is 600 square feet, what is the area of Tony's garden?
- A. 1200 ft²
 - B. 2400 ft²
 - C. 3600 ft²
 - D. 4800 ft²
52. Dr. Williams wants to carpet his rectangular living room, which measures 14 feet by 11 feet. If the carpet he wants to purchase costs \$1.50 per square foot, including tax, how much will it cost to carpet his living room?
- A. \$50
 - B. \$500
 - C. \$154
 - D. \$231



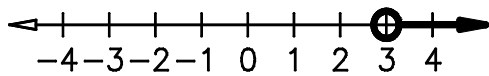
Use the graph below to answer question 53.



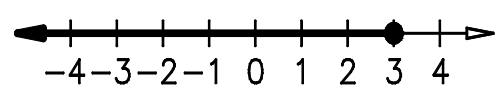
53. Which statement is true for the graph above?
- A. Ms. Dockins will earn \$500 if she sells \$5,000 worth of merchandise.
 - B. Ms. Schwendimann will not earn any money if she does not sell any merchandise.
 - C. Ms. Arnold will earn \$1,000 if she sells \$1,000 worth of merchandise.
 - D. Mr. Russell will earn \$700 if he sells \$5,000 worth of merchandise.

54. Which graph represents $x \leq 3$?

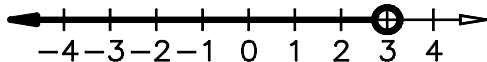
A.



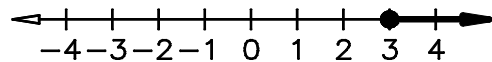
B.

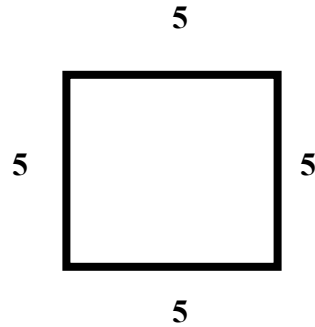


C.



D.





55. Angela thought the area of the square above was 20. Which could explain her error?
- A. She added when she should have multiplied.
 - B. She multiplied when she should have added.
 - C. She multiplied when she should have subtracted.
 - D. She multiplied when she should have divided.
56. Suppose you have a white, six-sided die numbered 1 through 6 and a red, six-sided die numbered 1 through 6. If you roll the red die and the white die simultaneously, what is the probability of landing on a 6 on the red die and landing on a 5 on the white die?
- A. 30
 - B. $\frac{1}{30}$
 - C. $\frac{1}{36}$
 - D. $\frac{1}{6}$
57. There are 19 members in Terrell's Spanish club. They need to elect a president, vice-president, secretary, and treasurer for the club. In how many different ways can the 4 leadership positions be filled?
- A. 9,304
 - B. 19
 - C. 257
 - D. 93,024

58. Determine how many phone numbers can be made under the following conditions:

The **first 2** digits are **3** followed by **6**.

The **third** digit is **even** (include **0** as a possibility).

The **fourth** digit is **greater** than **5**.

The **fifth** and **seventh** digits are **odd** (do **NOT** include **0** as a possibility).

The **sixth** digit is **2**.

- A. 50
- B. 5,040
- C. 500
- D. 50,400

From 1951 to 1968, Mickey Mantle played for the New York Yankees. The table below gives the number of homeruns he hit each year between 1951 and 1958. Use it to answer the following two questions.

<i>YEAR</i>	<i>HOMERUNS</i>
1951	13
1952	23
1953	21
1954	27
1955	37
1956	52
1957	34
1958	42

59. What was the median number of homeruns Mickey Mantle hit during this period?

- A. 31
- B. 30
- C. 30.5
- D. 31.13



60. What was the mean number of homeruns Mickey Mantle hit during this period?

- A. 31.13
- B. 31
- C. 30.5
- D. 30

61. Simplify: $3(x + 3) - 2(x + 3)$

- A. $x + 3$
- B. $x - 3$
- C. $-6x^2 - 54$
- D. $6x^2 + 3$

62. A six-sided die numbered 1 through 6 is rolled twice. What is the probability of rolling a number ≤ 4 ?

- A. $\frac{1}{2}$
- B. $\frac{3}{4}$
- C. $\frac{5}{8}$
- D. $\frac{2}{3}$



Use the tables below to answer question 63.

Table 1

n	b
0	\$20.00
1	\$17.50
2	\$15.00
4	\$10.00
6	\$ 5.00

Table 2

n	b
1	\$17.50
2	\$15.00
3	\$13.50
4	\$11.00
5	\$ 8.50

Table 3

n	b
0	\$20.00
2	\$17.50
4	\$15.00
6	\$12.50
8	\$10.00

Table 4

n	b
0	\$20.00
1	\$15.00
4	\$10.00
6	\$ 2.50
8	\$ 0.00

63. Amber received a gift card for \$20 worth of video rentals from a video store. If the cost of renting a video is \$2.50, which table best describes b , the balance remaining on the gift card after she rents n videos?

- A. Table 1
- B. Table 2
- C. Table 3
- D. Table 4

64. Find the next number in the sequence: **1.6, 4, 10, 25, ?**

- A. 37
- B. 54
- C. 62.5
- D. 45

65. Which list is the correct order of operations to simplify the following expression?

$$25 \div 5(9 + 2) - 8 =$$

- A. add, multiply, divide, subtract
- B. add, multiply, subtract, divide
- C. add, divide, multiply, subtract
- D. divide, add, multiply, subtract

66. Solve: $4\frac{5}{16} \div 4\frac{7}{8} =$

A. $16\frac{35}{69}$

B. $\frac{23}{26}$

C. $1\frac{1}{23}$

D. $\frac{23}{24}$

67. A zero added to any given number, with the sum equal to the given number, such as $6 + 0 = 6$, is an example of:

- A. Identity Property of Addition
- B. Associative Property of Addition
- C. Commutative Property of Addition
- D. all of the above

68. The box below contains the common factors of what two numbers?

1, 2, 3, 6, 9, 18

- A. 12 and 18
- B. 18 and 24
- C. 24 and 36
- D. 18 and 36

69. It takes Eric 2 hours to mow and trim the lawn by himself. It takes DeWayne 3 hours to do the same job alone. **Estimate** how long it will take them to do the lawn work together.

- A. < 1 hour
- B. a little more than an hour
- C. 2 hours
- D. $1\frac{1}{2}$ hours



70. The positive square root of 97 is between what integers?

- A. 10 and 11
- B. 8 and 9
- C. 11 and 12
- D. 9 and 10

71. The diameter of a wire is $\approx 2.65 \times 10^{-5}$ of an inch in scientific notation. Express this number in standard form.

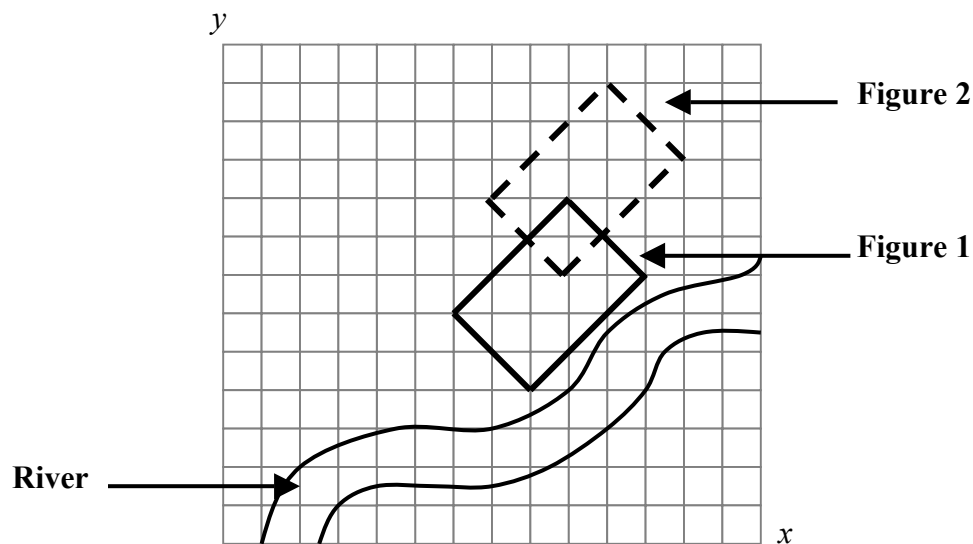
- A. .000265
- B. 265,000
- C. .0000265
- D. 26,500

72. Complete the sentence below.

In mathematics, a(n) _____ (or informally, a fraction) is a ratio of two integers, usually written as the vulgar fraction $\frac{a}{b}$, where b is not zero.

- A. integer
- B. rational number
- C. natural number
- D. complex number

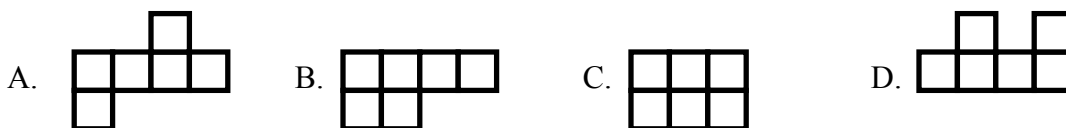
The Arts Center planned a rectangular space represented by **Figure 1** for an outdoor garden. The location was too close to a river, so the garden spot was moved as shown by **Figure 2**.



73. What term best describes the transformation of **Figure 1** to **Figure 2**?

- A. translation
- B. rotation
- C. reflection
- D. dilation

74. Which figure can be folded to make a cube?



75. A certain animal in the zoo has consumed 39 pounds of food in six days. If it continues to eat at the same rate, in how many more days will its total consumption be 91 pounds?

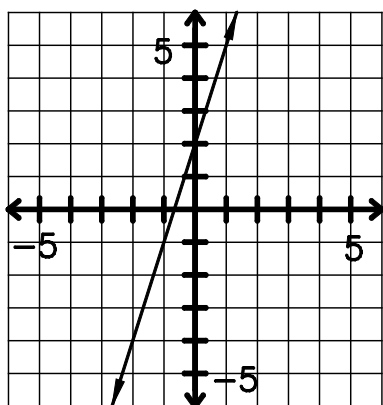
- A. 12
- B. 10
- C. 9
- D. 8

76. A dress on sale in a shop is marked at \$D. During the discount sale, its price is reduced by 15%. Staff members are allowed an additional 10% reduction off the discounted price. If a staff member buys the dress, what will she have to pay in terms of D?

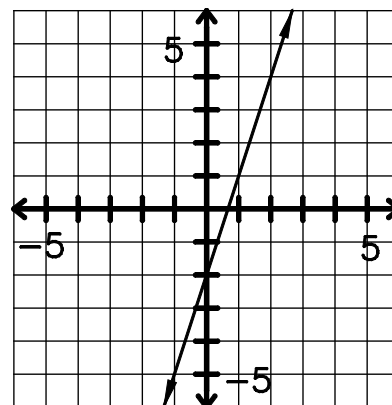
- A. 0.74D
- B. 0.76D
- C. 0.765D
- D. 0.775D

77. Which graph represents $y = -3x + 2$?

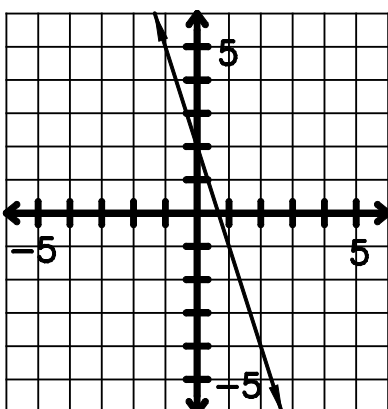
A.



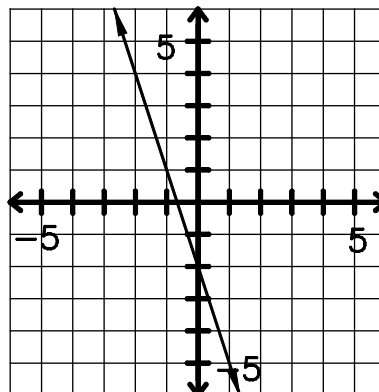
B.



C.

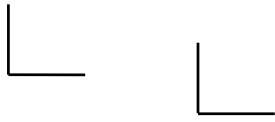


D.

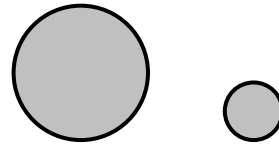


78. Which of the following is an example of a reflection?

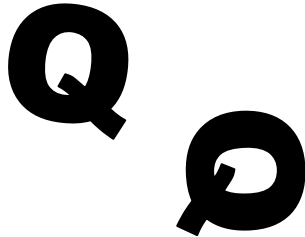
A.



B.



C.

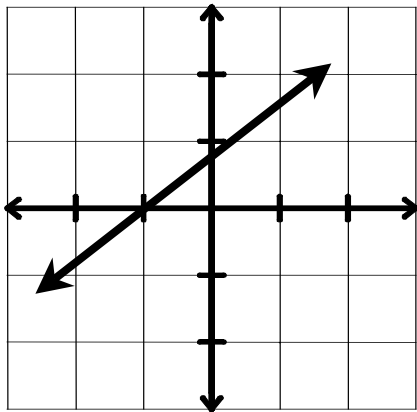


D.

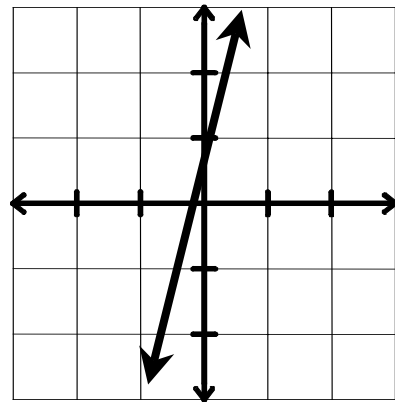


79. Which graph shows a line with no slope?

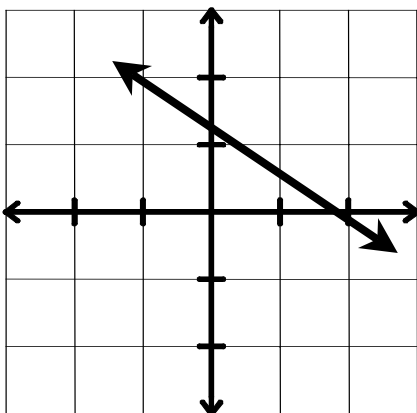
A.



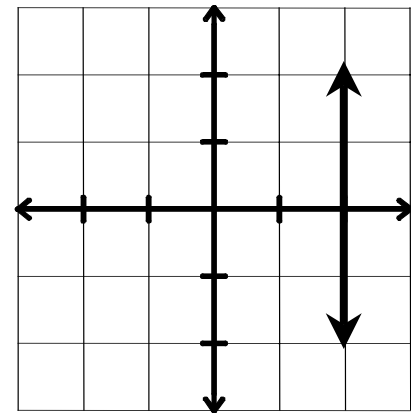
B.



C.



D.



80. How many numbers between **200** and **400** begin or end with the number 3?
- A. 20
 - B. 60
 - C. 100
 - D. 110