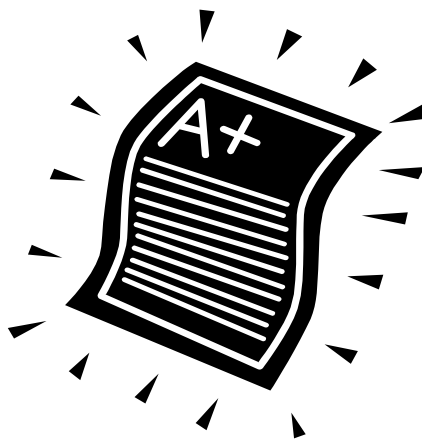


8th Grade Mathematics Assessment

Name: \_\_\_\_\_  
Date: \_\_\_\_\_  
School: \_\_\_\_\_  
District: \_\_\_\_\_

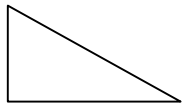


*Increasing Achievement for Schools,  
Teachers, & Students*

Pre Test

# Mathematics Reference Sheet

## Area



Triangle

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



Rectangle

$$A = lw$$



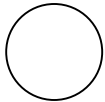
Trapezoid

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



Parallelogram

$$A = bh$$



Circle

$$A = \pi r^2$$

### Key

$b$  = base

$h$  = height

$l$  = length

$w$  = width

$S.A.$  = surface area

$d$  = diameter

$r$  = radius

$A$  = area

$C$  = circumference

$V$  = volume

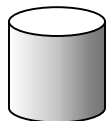
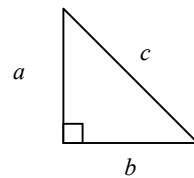
Use 3.14 or  $\frac{22}{7}$  for  $\pi$ .

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

## Circumference

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

Pythagorean Theorem  $c^2 = a^2 + b^2$



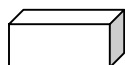
Right Circular Cylinder

### Volume

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

### Total Surface Area

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



Rectangular Solid

$$V = lwh$$

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

## 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. Mr. Todd's 4<sup>th</sup> period algebra class has 33 students. Of those students, 18 are girls. What is the ratio of boys to girls?
- A. 18 to 15
  - B. 6 to 11
  - C. 5 to 11
  - D. 5 to 6
46. Sam is buying dog food for his dog. The brands he has to pick from are reflected on the table below. Which statement is false?
- A. Big Bark costs more per pound than Big & Mighty.
  - B. Chow Time is the least expensive per pound.
  - C. Big & Mighty costs more per pound than Chow Time.
  - D. Big & Mighty is the most expensive per pound.

<b><i>Brand</i></b>	<b><i>Size</i></b>	<b><i>Price</i></b>
<b>Big &amp; Mighty</b>	15 lbs	\$32.85
<b>Chow Time</b>	20 lbs	\$31.80
<b>Big Bark</b>	10 lbs	\$18.90

A cooking magazine surveyed a group consisting of 5,000 of their subscribers to find out the most popular flavors of ice-cream. The table below shows the magazine's findings.

<i><b>Favorite Ice-cream Flavor</b></i>	<i><b>% of Subscribers</b></i>
Chocolate	36%
Vanilla	30%
Strawberry	17%
Butter Pecan	12%
Tutti Frutti	5%

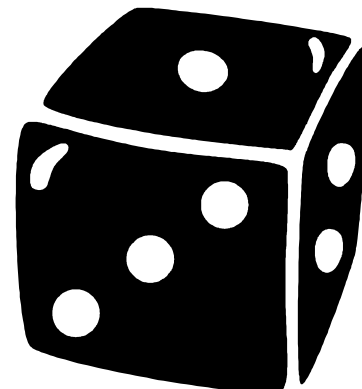
Renee surveyed 75 customers who were buying ice-cream at the grocery store to find out their favorite flavors of ice-cream.

<i><b>Favorite Ice-cream Flavor</b></i>	<i><b># of Grocery Shoppers</b></i>
Chocolate	25
Vanilla	23
Strawberry	15
Butter Pecan	9
Orange Sherbet	3

47. Based on the information provided in the tables above, which statement is true?
- A. In Renee's survey, 12% of the customers preferred butter pecan ice-cream, the same percentage preferring butter pecan for the magazine's survey.
  - B. In Renee's survey, 36% of the customers preferred chocolate ice-cream.
  - C. In Renee's survey, tutti frutti was the least favorite ice-cream flavor.
  - D. Renee's survey is more reliable because her sample size is larger.

48. What is the probability of rolling a prime number when rolling a six-sided die numbered one through six?

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



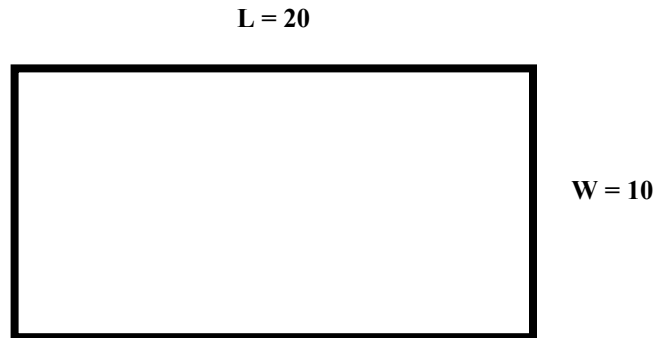
From 1920 to 1934 Babe Ruth played for the New York Yankees. The table below gives the number of homeruns he hit each year. Use the table to answer the following two questions.

<b>YEAR</b>	<b>HOMERUNS</b>
1920	54
1921	59
1922	35
1923	41
1924	46
1925	25
1926	47
1927	60
1928	54
1929	46
1930	49
1931	46
1932	41
1933	34
1934	22

49. What was the median number of homeruns Babe Ruth hit during this period of time?
- A. 44
  - B. 43
  - C. 46
  - D. 45
50. What is the mean number of homeruns Babe Ruth hit during this period of time? (Round your answer to the nearest whole number).
- A. 46
  - B. 45
  - C. 43
  - D. 44



51. The grocer bought 10 cases of drinks. Each case holds 12 bottles with 2 liters in each bottle. How many milliliters does the grocer have?
- A. 240
  - B. 2400
  - C. 24000
  - D. 240000

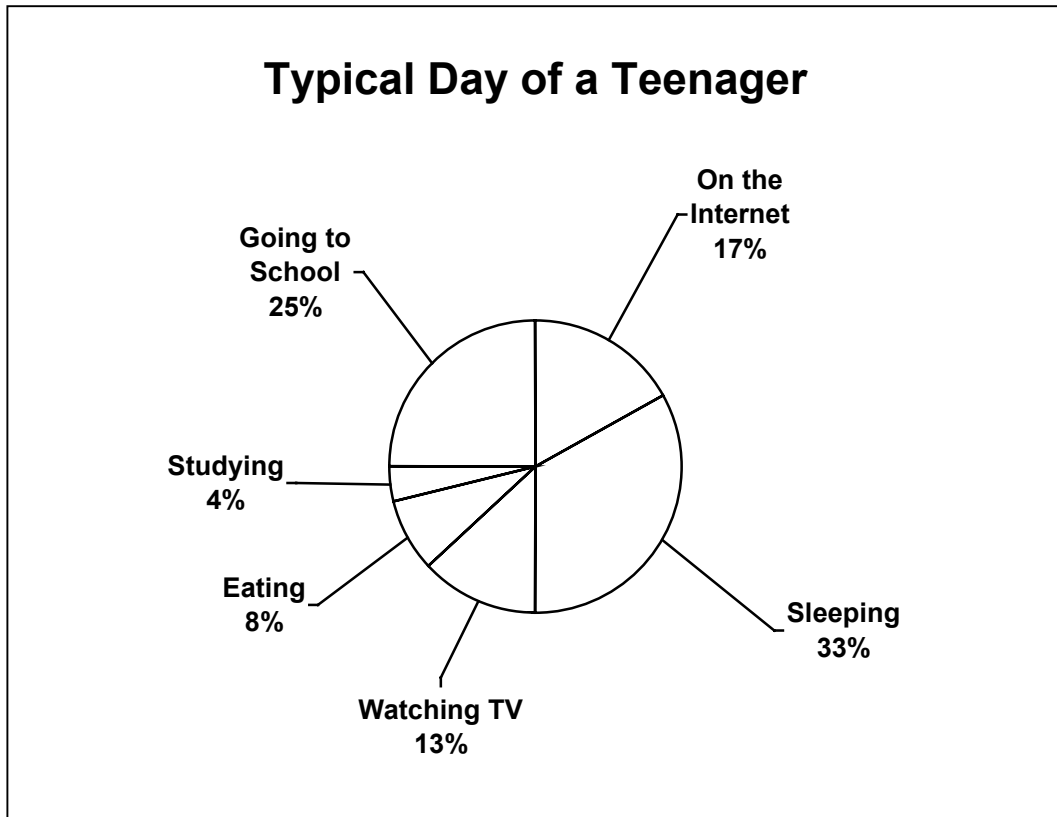


52. Look at the box above. Which would double the area of the box?
- A. double the length and halve the width
  - B. double the width and halve the length
  - C. double both the length and the width
  - D. double the width only
53. Two students were playing a game. The goal of the game was to be the first one to reach the door. The students started the game by standing 20 feet away from the door, and then they each took a turn to do the following:
- Child A moved **one half** the distance between herself and the door on each move.
  - Child B moved **one** foot toward the door on each move.

How far was each child from the door after the first move?

- A. Child A was 10 feet away from the door, and Child B was 19 feet away from the door.
- B. Child B was 10 feet away from the door, and Child A was 19 feet away from the door.
- C. Child A was 10 feet away from the door, and Child B was 1 foot away from the door.
- D. none of the above

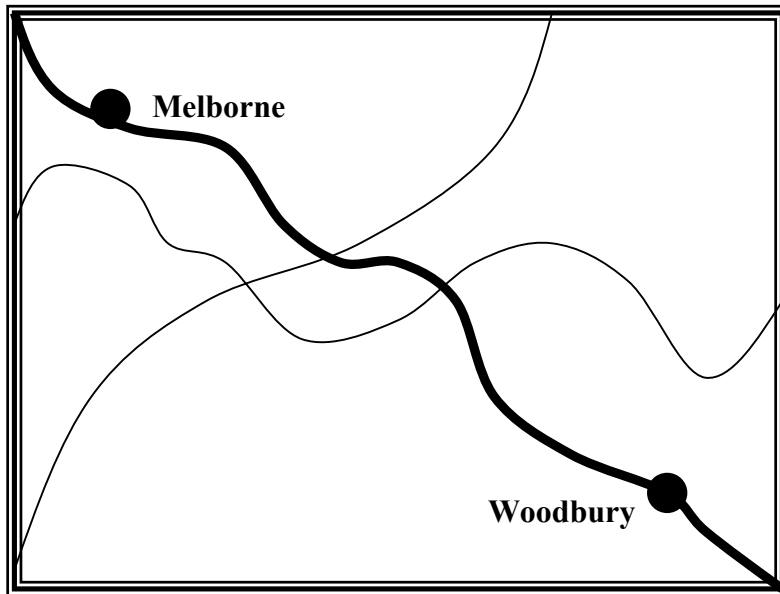
54. The graph below represents the typical day of a teenager. What two activities take up 25% of the day?
- A. On the Internet & Sleeping
  - B. On the Internet & Watching Television
  - C. On the Internet & Eating
  - D. Studying & Eating



55. Which set of numbers is ordered from least to greatest?
- A.  $-\frac{4}{7}$ ,  $-\frac{5}{8}$ ,  $-\frac{3}{4}$ ,  $-\frac{4}{5}$
  - B.  $-\frac{3}{4}$ ,  $-\frac{4}{5}$ ,  $-\frac{4}{7}$ ,  $-\frac{5}{8}$
  - C.  $-\frac{4}{5}$ ,  $-\frac{3}{4}$ ,  $-\frac{5}{8}$ ,  $-\frac{4}{7}$
  - D.  $-\frac{5}{8}$ ,  $-\frac{4}{7}$ ,  $-\frac{4}{5}$ ,  $-\frac{3}{4}$

56. A feedlot fattens cattle for the market. If a steer gains  $1\frac{1}{4}$  pounds per day, approximately how much will the steer gain in 32 days?
- A. 20 pounds
  - B. 25 pounds
  - C. 40 pounds
  - D. 50 pounds

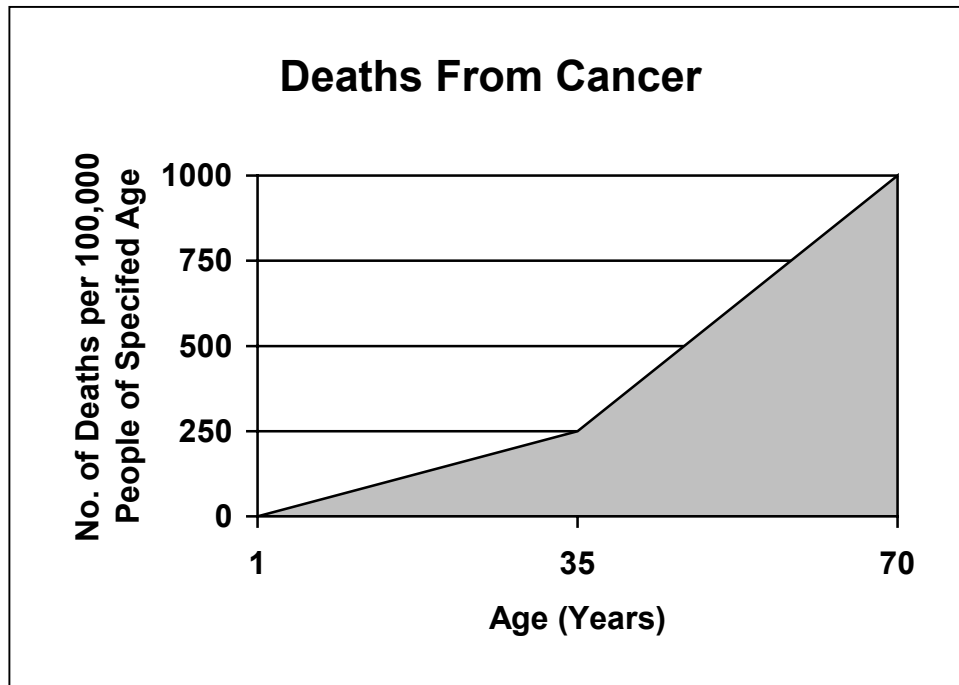
*Jose is going to visit some friends during his vacation. He wants to know how far Woodbury is from his home in Melborne. Look at the map below.*



Scale

$$\frac{1}{2} \text{ inch} = 10 \text{ miles}$$

57. On the map, Jose measured a total of 3.5 inches from Melborne to Woodbury. Based on the map scale, how many miles is it from Melborne to Woodbury?
- A. 30 miles
  - B. 50 miles
  - C. 60 miles
  - D. 70 miles



58. Which hypothesis is BEST represented by the graph above?
- Smoking causes cancer.
  - One person out of a thousand people will get cancer during his/her lifetime.
  - Young people cannot get cancer.
  - The probability of getting cancer increases with age.
59. Find the greatest common factor of 36 and 54.
- 9
  - 6
  - 18
  - 36
60. Juan's car averages 23 miles to a gallon of gasoline when he drives 55 mph. If he drives 55 mph for 4.75 hours, how many gallons of gas will he need?
- 261.25
  - 109.25
  - 4.84
  - 11.36

61. Divide:  $\frac{11}{18} \div \frac{22}{3}$

A.  $4\frac{13}{27}$

B. 12

C.  $\frac{1}{12}$

D.  $\frac{3}{8}$

62. What is the next number in the sequence? **2, 4, 8, 14, 22, ?**

A. 44

B. 28

C. 32

D. 38

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

$$2(6 - 4) + 10 \div 5 = \underline{\quad}$$

A. subtract, multiply, divide, add

B. multiply, divide, add, subtract

C. subtract, multiply, add, divide

D. divide, subtract, multiply, add

64. Deljuan is saving money to buy a video game. He has \$12. After receiving his earnings ( $n$ ) for mowing yards, he will have \$37. Which equation models this situation?

A.  $12 + n = 37$

B.  $12 + 37 = n$

C.  $37 + n = 12$

D.  $12 - n = 37$

65. Evaluate  $5x^3 + 2x^2 - 10$  if  $x = -1$ .

- A. -13
- B. -3
- C. 7
- D. 9

66. Evaluate  $\frac{a-b}{7}$  when  $a = 30$  and  $b = 2$ .

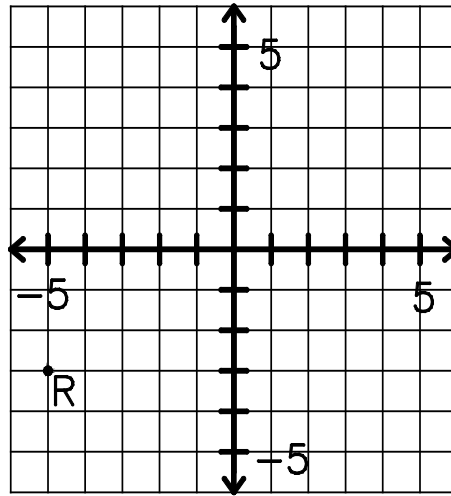
- A. 7
- B. 4
- C.  $\frac{8}{7}$
- D. 5

67. Translate “*the product of a number and the sum of the number and ten*” into an algebraic expression.

- A.  $x(x + 10)$
- B.  $x(10 - x)$
- C.  $x(x - 10)$
- D.  $x + (x + 10)$

68. Solve:  $x + 4 \geq 2$

- A.  $x \leq -8$
- B.  $x \geq 6$
- C.  $x \geq -2$
- D.  $x \leq -2$

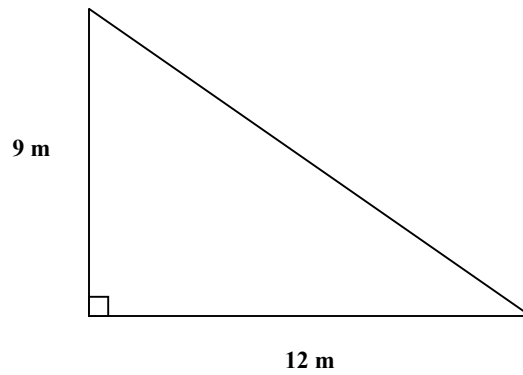


69. Which ordered pair represents Point R?

- A.  $(-5, -3)$
- B.  $(5, 3)$
- C.  $(3, 5)$
- D.  $(-3, -5)$

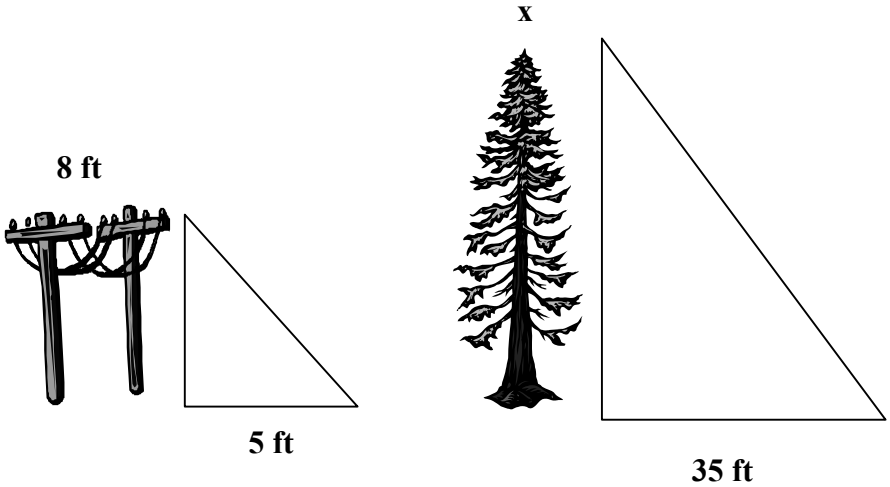
70. What is the length of the hypotenuse of the triangle below?

- A. 21 m
- B. 15 m
- C. 10.5 m
- D. 7.5 m



71. An 8-foot telephone pole casts a 5-foot shadow at the same time a tree casts a 35-foot shadow. How tall is the tree?

- A. 40 ft
- B. 38 ft
- C. 56 ft
- D. 33 ft

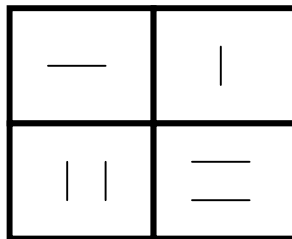


72. A TV screen measures 12 inches by 16 inches. What is the length of its diagonal?

- A. 28"
- B. 10"
- C. 20"
- D. 14"

73. If the figure is rotated 90° in a clockwise direction, what will appear in the upper right-hand corner?

- A. one vertical line
- B. one horizontal line
- C. two vertical lines
- D. two horizontal lines

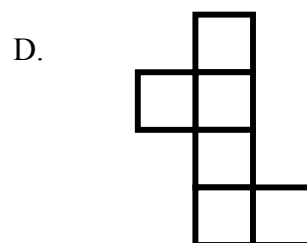
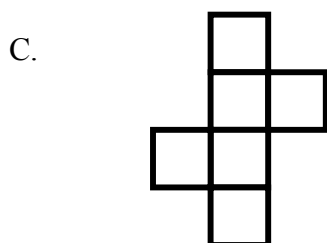
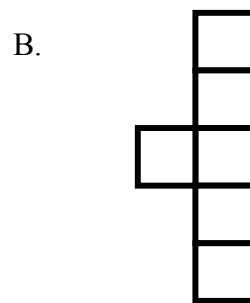
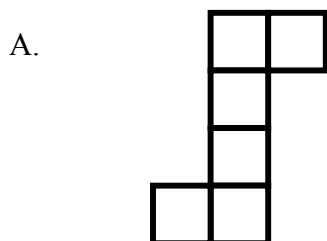


74. The student in the picture below is building a pyramid out of blocks. When he places the last piece on the top of the structure, how many sides will the pyramid have, including the base?

- A. 3
- B. 4
- C. 5
- D. 8



75. Which one of these would **not** form a tent for a cube?



76. Which figure will **not** tessellate?



77. When multiplying a whole number greater than 1 by a positive fraction less than 1, the product is which of the following?

- A. greater than the whole number
- B. less than the whole number
- C. less than the fraction
- D. equal to 1

78. In 1998, the estimated federal debt was \$5,506,000,000,000. Express this number in scientific notation.

- A.  $55.06 \times 10^{12}$
- B.  $5.506 \times 10^{12}$
- C.  $550.6 \times 10^{13}$
- D.  $5506 \times 10^8$

79. One mile is approximately 1609.345 meters. Which digit represents the thousandths?

- A. 3
- B. 4
- C. 5
- D. 6

80. The population of Kissimmee is  $\approx 256,000$ . Which one of the following could be the exact population?

- A. 255,878
- B. 260,121
- C. 25,600
- D. 2,560

