1)   SAT problem

$\sqrt{2}$ B
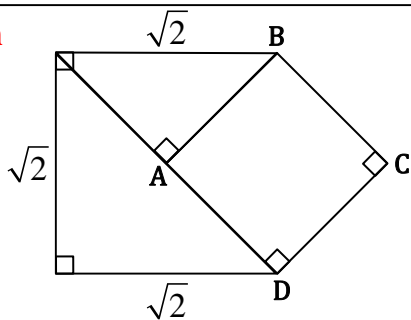
$\sqrt{2}$ A   C

$\sqrt{2}$ D

The area of square ABCD	$\sqrt{2}$
A	B

Which statement is true?

(A)   A is greater than B.

(B)   B is greater than A.

(C)   A and B are equal.

(D)   There is not enough information to tell which is greater.

2)   Solve the expression below for the values $a = -1$ and $b = 4$
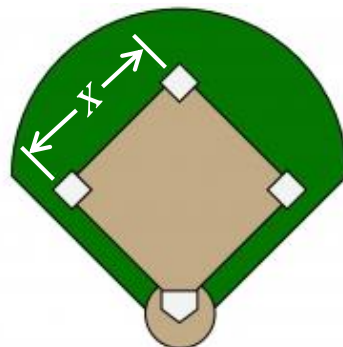
$$\left(b^{-2}\right)\left(\frac{ab}{-2}\right) + 4^a$$
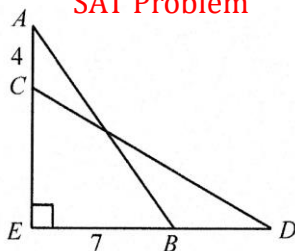
3)   Simplify the expressions below.

$$\left(x^2\right)^3$$

$$\frac{\left(y^6\right)\left(y^8\right)}{y^2}$$

$$\left(\left(b^3\right)^4\right)^5 \left(b^2\right)$$

4)   The baseball diamond formed by the three bases and home plate is a perfect square. The area of the square is 841 yd.^{2}. Write an algebraic equation that could be used to determine the length of x, the distance between 2nd and 3rd base. Then, solve the equation to identify the value of x.

5)

Note: Figure not drawn to scale.

In the figure above, $AB = CD = 25$, $EB = 7$, and $AC = 4$. What is the length of $\overline{BD}$?

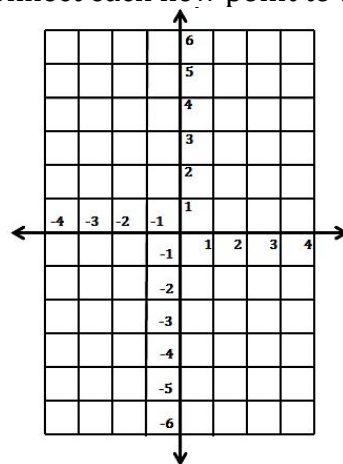A) 4
B) 5
C) 6
D) 7
E) 8

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6) Convert 345,020,000 to scientific notation.   Convert 4.002×10^{-4} to standard form.

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7) Plot these ordered pairs. As you plot these points, label them and connect each new point to the previous point by drawing a line. A (0,0); B (0,4); C (2,0)

Name the location of each point: A _____

                             B _____

                             C _____

What is the most specific name for the polygon that you have drawn?

What is its area?

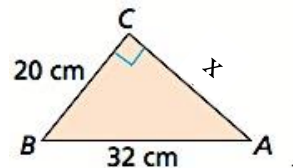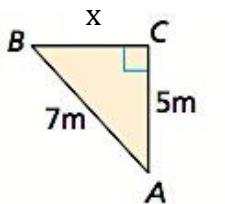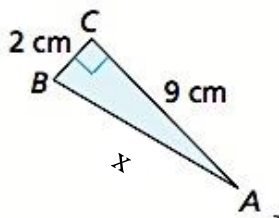
8) Give an example for each of the mathematical properties listed below:

Multiplicative Identity	Multiplicative Inverse	Substitution
Additive Identity	**Additive Inverse**	**Reflexive Property**

Property of Equality

9) What must be true for a number to be expressed in scientific notation?

10) Find the unknown lengths. Round to the nearest tenth.

11) Solve the equation below by identifying the variable value. Once you have identified the value of the variable, substitute it back into the original equation to verify.

$$2m + 15 = 31$$
✓ $2m + 15 = 31$

12) If $5^3 + 5^3 + 5^3 + 5^3 + 5^3 = 5^n$, where n is a positive integer, what is the value of n?

A) 3
B) 4
C) 5
D) 6
E) 7

13) Plot these ordered pairs. As you plot these points, label them and connect each new point to the previous point by drawing a line. A (1,0); B (0,-4); C (-2,-4); D (-3, 0)
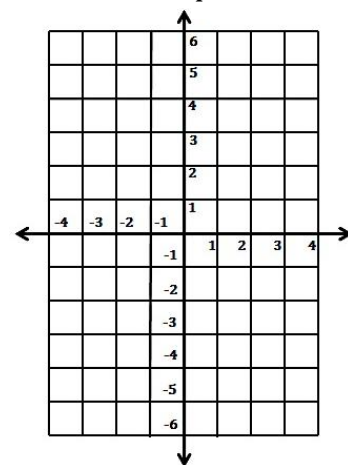
Name the location of each point. A:
                                      B:
                                      C:
                                      D:

What polygon have you drawn?

What is its area?

14) A stray dog ate 12 of your cupcakes! That was $\frac{3}{10}$ of all of your cupcakes. How many cupcakes did you start with? (write and solve an algebraic equation).

15) Solve the equation below by identifying the variable value. Once you have identified the value of the variable, substitute it back into the original equation to verify.

$$\frac{3}{7}h = 6$$
                             ✓ $\frac{3}{7}h = 6$

16) SAT problem

If $8^n \times 4^2 = 2^{10}$, what is the value of n?

A) 2
B) 3
C) 4
D) 5
E) 6