

**Directions:** Please do all work on separate paper. No books, notes, calculators are allowed. A trig chart is allowed.

**NOTE 2:** When solving equations, please check if there is one solution.

1. Write the following formulas. Make sure you include words for the name, variable on left side and expression on the right.

- a. Area of a rectangle:
- b. Perimeter of a rectangle:
- c. Area of a triangle:
- d. Area of a circle:
- e. Circumference of a circle:
- f. Volume of a rectangular solid:
- g. Volume of right cylindrical cylinder:

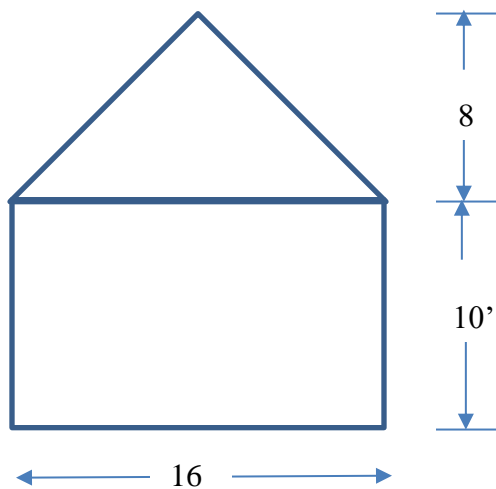
2. Solve:

- a.  $5(2x - 3) + 3 = 3(2x - 4) - x$
- b.  $10x + 5 = -3x + 5 - 2x$

3. Simplify

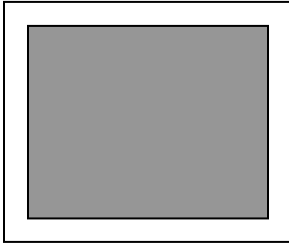
- a.  $-3r^2(-10r^2 + 8r) =$

4. Find the entire area of the side of the house. If a gallon of paint covers  $200 \text{ ft}^2$ , how much paint is needed? Round up to the nearest gallon.



5. Solve the following worded problems.

- a. The diagram below shows a sidewalk around a pool. If the dimensions of the pool (that is the shaded region) are 40 feet by 60 feet and if the walk has a width of 4 feet, what is the area of the entire sidewalk?



6. Criers ice cream use a cylindrical container for their ice cream. The diameter of the container is 5 inches and the height is eight inches. Answer the following:
- a. What is the volume of the container?
- b. Criers decides to lower the height by an inch, what is the new volume?
- c. What is the difference between the two volumes?
7. Solve and put the answers in set builder form, interval form and graph the results on a number line.

$$3x - 6 \geq 2(3x + 12)$$

8. Simplify if possible

a.  $n^2 + n^2 =$  \_\_\_\_\_

b.  $(n^2)(n^2) =$  \_\_\_\_\_

c.  $n^2 + n^4 =$  \_\_\_\_\_

d.  $(n^2)(n^4) =$  \_\_\_\_\_