Two Step Mixer Day 1
Name_____

1. The You Move It Company (YMI) advertises that the cost to rent a moving truck for one day is $65 plus $2.53 for each mile the truck is driven. The Drive and Move Company (DM) advertises that the cost to rent a moving truck for one day is $72 plus $1.94 for each mile the truck is driven.

   Part A. Write an equation for how much it costs to rent from YMI driving x miles.

   Part B. Write and equation for how much it costs to rent from DM driving x miles.

2. The equation below was solved using properties of equality.

$$\frac{3x}{4} + 7 = 19$$

$$\frac{3x}{4} = 12 \quad \leftarrow \text{Step 1}$$

$$3x = 48 \quad \leftarrow \text{Step 2}$$

$$x = 16 \quad \leftarrow \text{Step 3}$$

Which property of equality was used to rewrite the equation from Step 1 to Step 2?

   A. Division   B. Addition   C. Subtraction   D. Multiplication

Why did you choose your answer?

3. Ben works as a salesman. Each month he earns a $3,200 flat salary plus a commission of 8% of his monthly sales.

   Part A Write an equation that can be used to find Ben's monthly earnings (E) based on x dollars in monthly sales. [Hint: To find the percentage of a number, multiply the percent/100 and the number. For example, 60% of 15: (60/100)*15 = (.6)*(15) = 9]

   Part B Last month, Ben earned $3,859. What was the total of Ben's monthly sales last month? Show or explain your work. (Hint: You may isolate the variable without doing the calculation. For example $x + 3 = 8 \rightarrow x = 8 - 3$ is an acceptable answer.)

4. The total surface area of a cylinder is given by the formula $S = 2\pi rh + 2\pi r^2$ where r represents the radius and h represents the height of the cylinder. What equation can be used to find the value of h? (Hint: Think of pi and r as constants)

5. The student council is selling cupcakes at the school play. The cost to make the cupcakes is a fixed $45 plus $0.23 per cupcake made. Each cupcake sells for $2.00 each.

   Write an equation for the cost, C, of making x cupcakes and an equation for the revenue (revenue means how much money you bring in), R, from selling x cupcakes.

   C=

   R=

6. Four times the larger of two consecutive even integers is ten less than the smaller. What is the larger of these two numbers?

7. The equation $KE = \frac{1}{2}mv^2$ represents the kinetic energy (KE) of an object with mass (m) and speed (v). Which equation shows v in terms of KE and m? (Hint: Solve for v. Think of m and KE as constants)

   A. $v = 2\sqrt{\dfrac{KE}{m}}$

   B. $v = \dfrac{2KE}{m}$

   C. $v = \sqrt{\dfrac{2KE}{m}}$

   D. $v = \dfrac{KE}{2M}$

8. In the equation mx + 6 = -18 , m is a negative integer. What is true about x?
   a. x is positive.
   b. x is negative.
   c. x is equal to 0.
   d. x is any real number.

Give an example to explain your answer to #8.