NAME _____

1. What is the property that justifies the step between Step 4 and Step 5?

Step 1: $8 + 2x = 14$

Step 2: $8 + (-8) + 2x = 14 + (-8)$

Step 3: $0 + 2x = 14 + (-8)$

Step 4: $0 + 2x = 6$

Step 5: $2x = 6$

Step 6: $\dfrac{2x}{2} = \dfrac{6}{2}$

Step 7: $1x = \dfrac{6}{2}$

Step 8: $1x = 3$

Step 9: $x = 3$

2. Simplify using the distributive property:

$6\left(x - \dfrac{1}{2}\right)$	$\dfrac{1}{3}(3x - 9)$

3. Solve for a.

$$2b - a = 5$$

4. Which property of equality is illustrated by the following statement?

$$\text{If } a = b, \text{ then } b = a.$$

5. Choose the examples of an equation with no solution.

$3x + 10 = 3x + 15$
$4x - 2 = 4x - 4 + 2$
$8x = 4(2x + 1)$
$x + 3 = x + 6$
$8x + 5 = 6x + 1$

6. Which property justifies this step?

$$3x - (x - 5) = 9$$

Step 1: $3x - x + 5 = 9$

7. What is the value of the following:

$$7\sqrt{20} - 3\sqrt{45}$$

8. Simplify the radical.

$$\sqrt{15} \cdot \sqrt{36}$$

9. Solve for variable x:

$$8 = 5y(x - z)$$

10. Solve for variable w:

$$A = \frac{1}{4}lw$$