

Name \_\_\_\_\_

**SOLVING EQUATIONS—VARIABLES ON BOTH SIDES #1**

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**Directions:** Solve for  $x$  in each equation below. Use inverse operations to get the variable all by itself on one side of the equation, and then get the integers (numbers) alone on the other side of the equation.

Examples:  $5x = 2x + 48$  (*subtract 2x from both sides*)       $5x + 12 = 2x + 36$  (*subtract 2x from both sides*)  
 $3x = 48$  (*divide both sides by 3*)       $3x + 12 = 36$  (*subtract 12 from both sides*)  
 $x = 16$        $3x = 24$  (*divide both sides by 3*)  
 $x = 8$

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1)  $3x = 2x + 50$

2)  $6x = 2x + 44$

3)  $8x = 2x + 36$

4)  $4x = x + 18$

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

5)  $7x + 10 = 3x + 120$

6)  $20 + 2x = x + 56$

7)  $6x + 16 = 2x + 28$

8)  $12x + 12 = 3x + 84$

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

9)  $3 + 6x = 2x + 27$

10)  $8x + 2 = 72 + x$

11)  $2x + 20 = x + 60$

12)  $4x + 1 = 25 + 2x$

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

$x =$  \_\_\_\_\_

