

Solving with Variables on Both Sides:

$$2x + 8 = 6x$$

$$\boxed{2x} + \boxed{8} = \boxed{6x} + \boxed{}$$

$$\boxed{8} = \boxed{6x}$$

$$\boxed{} = \boxed{}$$

$$32 + 2x = 10x$$

$$\boxed{32} + \boxed{2x} = \boxed{10x} + \boxed{}$$

$$\boxed{32} = \boxed{-2x + 10x}$$

$$\frac{\boxed{32}}{8} = \frac{\boxed{8x}}{8}$$

$$\boxed{4 = x}$$

check

$$32 + 2x = 10x$$

$$32 + 2(4) = 10(4)$$

$$32 + 8 = 40$$

$$40 = 40 \checkmark$$

$$50 - 4x = 6x$$

$$50 + 4x = 6x$$

$$50 = 4x + 6x$$

$$\frac{50}{10} = \frac{10x}{10}$$

$$\boxed{5 = x}$$

check

$$50 - 4(5) = 6(5)$$

$$50 - 20 = 30$$

$$30 = 30 \checkmark$$

$$6x + 4 = 2x + 16$$

$$6x - 2x + 4 = 16$$

$$6x + 2x = 16 + -4$$

$$\frac{4x}{4} = \frac{12}{4}$$

$$\boxed{x = 3}$$

$$3x - 8 = -5x + 24$$

$$3x + 5x - 8 = 24$$

$$3x + 5x = 24 + 8$$

$$\frac{8x}{8} = \frac{32}{8}$$

$$x = 4$$

Combine like terms

$$-x + 23 = 4(2x - 1)$$

$$4 \cdot 2x = 8x$$

$$4 \cdot -1 = -4$$

$$-x + 23 = 8x + -4$$

$$23 = 8x + x + -4$$

$$23 + 4 = 8x + x$$

$$\frac{27}{9} = \frac{9x}{9}$$

$$3 = x$$

$$\boxed{3 = x}$$