

Solving Multi-Step Equations

Variables on Both Sides

Name: _____ Date: _____



Solve the equations.

(1) $x - 46 = -6x + 31$

(2) $-51 - 2x = 63 - 8x$

(3) $-37 - 6x = -3x + 14$

(4) $-112 - 6x = 9x + 53$

(5) $-2x - 107 = 53 + 8x$

(6) $-65 + 3x = -4x + 40$

(7) $-58 + 5x = 26 - x$

(8) $6x - 108 = 42 - 4x$

(9) $-6x - 30 = -2x + 10$

(10) $-7x - 22 = 11 - 4x$

Solving Multi-Step Equations

Variables on Both Sides - Negative Coefficients

ANSWER KEY



Solve the equations.

$$\begin{aligned}(1) \quad x - 46 &= -6x + 31 \\ -46 + 7x &= 31 \\ 7x &= 77 \\ x &= 11\end{aligned}$$

$$\begin{aligned}(2) \quad -51 - 2x &= 63 - 8x \\ -51 + 6x &= 63 \\ 6x &= 114 \\ x &= 19\end{aligned}$$

$$\begin{aligned}(3) \quad -37 - 6x &= -3x + 14 \\ -37 - 3x &= 14 \\ -3x &= 51 \\ x &= -17\end{aligned}$$

$$\begin{aligned}(4) \quad -112 - 6x &= 9x + 53 \\ -112 - 15x &= 53 \\ -15x &= 165 \\ x &= -11\end{aligned}$$

$$\begin{aligned}(5) \quad -2x - 107 &= 53 + 8x \\ -107 - 10x &= 53 \\ -10x &= 160 \\ x &= -16\end{aligned}$$

$$\begin{aligned}(6) \quad -65 + 3x &= -4x + 40 \\ -65 + 7x &= 40 \\ 7x &= 105 \\ x &= 15\end{aligned}$$

$$\begin{aligned}(7) \quad -58 + 5x &= 26 - x \\ -58 + 6x &= 26 \\ 6x &= 84 \\ x &= 14\end{aligned}$$

$$\begin{aligned}(8) \quad 6x - 108 &= 42 - 4x \\ -108 + 10x &= 42 \\ 10x &= 150 \\ x &= 15\end{aligned}$$

$$\begin{aligned}(9) \quad -6x - 30 &= -2x + 10 \\ -30 - 4x &= 10 \\ -4x &= 40 \\ x &= -10\end{aligned}$$

$$\begin{aligned}(10) \quad -7x - 22 &= 11 - 4x \\ -22 - 3x &= 11 \\ -3x &= 33 \\ x &= -11\end{aligned}$$