

Solving Multi-Step Equations

Variables on Both Sides - Negative Coefficients

Name: _____ Date: _____



Solve the equations.

(1) $-x - 7 = 11 + 2x$

(2) $2x - 24 = -3x + 16$

(3) $-59 - 4x = 25 + 2x$

(4) $4x - 19 = 17 - 2x$

(5) $-5 + 4x = 6x + 11$

(6) $4x - 25 = x + 8$

(7) $-84 + 3x = 33 - 6x$

(8) $-14 + 6x = 4x + 6$

(9) $-15 - x = -5x + 25$

(10) $-4x - 107 = 28 + 5x$

(11) $-11 - 5x = 3 - 4x$

(12) $-2x - 41 = 57 + 5x$

(13) $-3x - 37 = 2x + 28$

(14) $x - 42 = -5x + 12$

(15) $-22 - x = 8 - 3x$

(16) $3x - 16 = 12 - x$

(17) $-17 + x = 31 - 5x$

(18) $5x - 31 = -4x + 50$

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ANSWER KEY



Solve the equations.

$$\begin{aligned} (1) \quad -x - 7 &= 11 + 2x \\ -7 - 3x &= 11 \\ -3x &= 18 \\ x &= -6 \end{aligned}$$

$$\begin{aligned} (2) \quad 2x - 24 &= -3x + 16 \\ -24 + 5x &= 16 \\ 5x &= 40 \\ x &= 8 \end{aligned}$$

$$\begin{aligned} (3) \quad -59 - 4x &= 25 + 2x \\ -59 - 6x &= 25 \\ -6x &= 84 \\ x &= -14 \end{aligned}$$

$$\begin{aligned} (4) \quad 4x - 19 &= 17 - 2x \\ -19 + 6x &= 17 \\ 6x &= 36 \\ x &= 6 \end{aligned}$$

$$\begin{aligned} (5) \quad -5 + 4x &= 6x + 11 \\ -5 - 2x &= 11 \\ -2x &= 16 \\ x &= -8 \end{aligned}$$

$$\begin{aligned} (6) \quad 4x - 25 &= x + 8 \\ -25 + 3x &= 8 \\ 3x &= 33 \\ x &= 11 \end{aligned}$$

$$\begin{aligned} (7) \quad -84 + 3x &= 33 - 6x \\ -84 + 9x &= 33 \\ 9x &= 117 \\ x &= 13 \end{aligned}$$

$$\begin{aligned} (8) \quad -14 + 6x &= 4x + 6 \\ -14 + 2x &= 6 \\ 2x &= 20 \\ x &= 10 \end{aligned}$$

$$\begin{aligned} (9) \quad -15 - x &= -5x + 25 \\ -15 + 4x &= 25 \\ 4x &= 40 \\ x &= 10 \end{aligned}$$

$$\begin{aligned} (10) \quad -4x - 107 &= 28 + 5x \\ -107 - 9x &= 28 \\ -9x &= 135 \\ x &= -15 \end{aligned}$$

$$\begin{aligned} (11) \quad -11 - 5x &= 3 - 4x \\ -11 - x &= 3 \\ -x &= 14 \\ x &= -14 \end{aligned}$$

$$\begin{aligned} (12) \quad -2x - 41 &= 57 + 5x \\ -41 - 7x &= 57 \\ -7x &= 98 \\ x &= -14 \end{aligned}$$

$$\begin{aligned} (13) \quad -3x - 37 &= 2x + 28 \\ -37 - 5x &= 28 \\ -5x &= 65 \\ x &= -13 \end{aligned}$$

$$\begin{aligned} (14) \quad x - 42 &= -5x + 12 \\ -42 + 6x &= 12 \\ 6x &= 54 \\ x &= 9 \end{aligned}$$

$$\begin{aligned} (15) \quad -22 - x &= 8 - 3x \\ -22 + 2x &= 8 \\ 2x &= 30 \\ x &= 15 \end{aligned}$$

$$\begin{aligned} (16) \quad 3x - 16 &= 12 - x \\ -16 + 4x &= 12 \\ 4x &= 28 \\ x &= 7 \end{aligned}$$

$$\begin{aligned} (17) \quad -17 + x &= 31 - 5x \\ -17 + 6x &= 31 \\ 6x &= 48 \\ x &= 8 \end{aligned}$$

$$\begin{aligned} (18) \quad 5x - 31 &= -4x + 50 \\ -31 + 9x &= 50 \\ 9x &= 81 \\ x &= 9 \end{aligned}$$