

Solving Multi-Step Equations

Variables on Both Sides - Negative Coefficients

Name: _____ Date: _____



Solve the equations.

(1) $-99 + 7x = -5x + 225$

(2) $6x - 41 = -2x + 79$

(3) $-9 + 4x = 20 + 3x$

(4) $-14x - 25 = 21 - 12x$

(5) $-104 - 12x = -4x + 88$

(6) $9x - 95 = 121 + x$

(7) $-172 - 6x = 84 + 2x$

(8) $-x - 116 = -6x + 39$

(9) $-76 + 15x = 38 + 9x$

(10) $-75 - 8x = -4x + 65$

(11) $x - 184 = 136 + 11x$

(12) $-218 - x = 76 + 13x$

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ANSWER KEY



Solve the equations.

$$\begin{aligned}(1) \quad -99 + 7x &= -5x + 225 \\ -99 + 12x &= 225 \\ 12x &= 324 \\ x &= 27\end{aligned}$$

$$\begin{aligned}(2) \quad 6x - 41 &= -2x + 79 \\ -41 + 8x &= 79 \\ 8x &= 120 \\ x &= 15\end{aligned}$$

$$\begin{aligned}(3) \quad -9 + 4x &= 20 + 3x \\ -9 + x &= 20 \\ x &= 29\end{aligned}$$

$$\begin{aligned}(4) \quad -14x - 25 &= 21 - 12x \\ -25 - 2x &= 21 \\ -2x &= 46 \\ x &= -23\end{aligned}$$

$$\begin{aligned}(5) \quad -104 - 12x &= -4x + 88 \\ -104 - 8x &= 88 \\ -8x &= 192 \\ x &= -24\end{aligned}$$

$$\begin{aligned}(6) \quad 9x - 95 &= 121 + x \\ -95 + 8x &= 121 \\ 8x &= 216 \\ x &= 27\end{aligned}$$

$$\begin{aligned}(7) \quad -172 - 6x &= 84 + 2x \\ -172 - 8x &= 84 \\ -8x &= 256 \\ x &= -32\end{aligned}$$

$$\begin{aligned}(8) \quad -x - 116 &= -6x + 39 \\ -116 + 5x &= 39 \\ 5x &= 155 \\ x &= 31\end{aligned}$$

$$\begin{aligned}(9) \quad -76 + 15x &= 38 + 9x \\ -76 + 6x &= 38 \\ 6x &= 114 \\ x &= 19\end{aligned}$$

$$\begin{aligned}(10) \quad -75 - 8x &= -4x + 65 \\ -75 - 4x &= 65 \\ -4x &= 140 \\ x &= -35\end{aligned}$$

$$\begin{aligned}(11) \quad x - 184 &= 136 + 11x \\ -184 - 10x &= 136 \\ -10x &= 320 \\ x &= -32\end{aligned}$$

$$\begin{aligned}(12) \quad -218 - x &= 76 + 13x \\ -218 - 14x &= 76 \\ -14x &= 294 \\ x &= -21\end{aligned}$$