

Solving Multi-Step Equations

Variables on Both Sides - Negative Coefficients

Name: _____ Date: _____



Solve the equations.

(1) $-4x - 110 = 214 + 5x$

(2) $10x - 149 = x + 184$

(3) $-186 - 2x = -12x + 194$

(4) $-123 - 4x = 54 - 7x$

(5) $-21x - 131 = 213 - 13x$

(6) $-8x - 290 = -x + 109$

(7) $16x - 59 = 55 + 14x$

(8) $-129 + 11x = 75 + 15x$

(9) $19x - 77 = 163 + 24x$

(10) $x - 103 = 4x + 26$

(11) $-269 - 23x = -9x + 81$

(12) $8x - 173 = 233 + x$

(13) $13x - 65 = 135 + 21x$

(14) $-302 - 22x = -15x + 90$

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ANSWER KEY



Solve the equations.

$$\begin{aligned}(1) \quad -4x - 110 &= 214 + 5x \\ -110 - 9x &= 214 \\ -9x &= 324 \\ x &= -36\end{aligned}$$

$$\begin{aligned}(2) \quad 10x - 149 &= x + 184 \\ -149 + 9x &= 184 \\ 9x &= 333 \\ x &= 37\end{aligned}$$

$$\begin{aligned}(3) \quad -186 - 2x &= -12x + 194 \\ -186 + 10x &= 194 \\ 10x &= 380 \\ x &= 38\end{aligned}$$

$$\begin{aligned}(4) \quad -123 - 4x &= 54 - 7x \\ -123 + 3x &= 54 \\ 3x &= 177 \\ x &= 59\end{aligned}$$

$$\begin{aligned}(5) \quad -21x - 131 &= 213 - 13x \\ -131 - 8x &= 213 \\ -8x &= 344 \\ x &= -43\end{aligned}$$

$$\begin{aligned}(6) \quad -8x - 290 &= -x + 109 \\ -290 - 7x &= 109 \\ -7x &= 399 \\ x &= -57\end{aligned}$$

$$\begin{aligned}(7) \quad 16x - 59 &= 55 + 14x \\ -59 + 2x &= 55 \\ 2x &= 114 \\ x &= 57\end{aligned}$$

$$\begin{aligned}(8) \quad -129 + 11x &= 75 + 15x \\ -129 - 4x &= 75 \\ -4x &= 204 \\ x &= -51\end{aligned}$$

$$\begin{aligned}(9) \quad 19x - 77 &= 163 + 24x \\ -77 - 5x &= 163 \\ -5x &= 240 \\ x &= -48\end{aligned}$$

$$\begin{aligned}(10) \quad x - 103 &= 4x + 26 \\ -103 - 3x &= 26 \\ -3x &= 129 \\ x &= -43\end{aligned}$$

$$\begin{aligned}(11) \quad -269 - 23x &= -9x + 81 \\ -269 - 14x &= 81 \\ -14x &= 350 \\ x &= -25\end{aligned}$$

$$\begin{aligned}(12) \quad 8x - 173 &= 233 + x \\ -173 + 7x &= 233 \\ 7x &= 406 \\ x &= 58\end{aligned}$$

$$\begin{aligned}(13) \quad 13x - 65 &= 135 + 21x \\ -65 - 8x &= 135 \\ -8x &= 200 \\ x &= -25\end{aligned}$$

$$\begin{aligned}(14) \quad -302 - 22x &= -15x + 90 \\ -302 - 7x &= 90 \\ -7x &= 392 \\ x &= -56\end{aligned}$$