

Solving Equations 13
Geometry

Solve, check, and graph the following equations.

1) $-13x + 17x = -16$

$$x = -4$$

2) $3x - 7x + 41 = 29$

$$x = 3$$

3) $12 - 5x - 32 + 15x = 30$

$$10x - 20 = 30$$

$$\begin{array}{r} +20 \quad +20 \\ \hline 10x = 50 \end{array}$$

$$10 \quad 10$$

$$x = 5$$

$$\checkmark 12 - 5(5) - 32 + 15(5) = 30 \\ 12 - 25 - 32 + 75 = 30 \\ 30 = 30 \checkmark$$



4) $-121 - 4x = -15x$

$$x = 11$$

5) $8x - 11 = 3 - 6x$

$$\begin{array}{r} +6x \quad \quad \quad +6x \\ \hline 14x - 11 = 3 \\ \quad \quad \quad +11 \quad +11 \\ \hline 14x = 14 \\ \quad \quad \quad 14 \quad 14 \\ \hline x = 1 \end{array}$$

6) $130 = -10(7 + 4x)$

$$x = -5$$

$$\checkmark 8(1) - 11 = 3 - 6(1) \\ 8 - 11 = 3 - 6 \\ -3 = -3 \checkmark$$



7) $5(7x - 3) = 29x + 51$

$$x = 11$$

8) $5x^2 + 7 = 87$

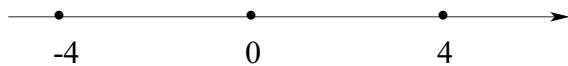
$$\begin{array}{r} -7 \quad -7 \\ \hline 5x^2 = 80 \\ \quad \quad 5 \quad 5 \\ \hline \sqrt{x^2} = \sqrt{16} \\ \hline x = \pm 4 \end{array}$$

9) $4x^3 + 13 = -19$

$$\begin{array}{r} -13 \quad -13 \\ \hline 4x^3 = -32 \\ \quad \quad 4 \quad 4 \\ \hline \sqrt[3]{x^3} = \sqrt[3]{-8} \\ \hline x = -2 \end{array}$$

$$\checkmark 5(4)^2 + 7 = 87 \quad \checkmark 5(-4)^2 + 7 = 87 \\ 5(16) + 7 = 87 \quad 5(16) + 7 = 87 \\ 80 + 7 = 87 \quad 80 + 7 = 87 \\ 87 = 87 \checkmark \quad 87 = 87 \checkmark$$

$$\checkmark 4(-2)^3 + 13 = -19 \\ 4(-8) + 13 = -19 \\ -32 + 13 = -19 \\ -19 = -19 \checkmark$$



$$\begin{aligned}
 10) \quad & 7(-2y + 7) = -26y + 13 \\
 & -14y + 49 = -26y + 13 \\
 & +26y \quad +26y \\
 \hline
 & 12y + 49 = 13 \\
 & -49 \quad -49 \\
 \hline
 & \underline{12y = -36} \\
 & \underline{12} \quad \underline{12}
 \end{aligned}$$

$$y = -3$$

$$\begin{aligned}
 \checkmark 7(-2(-3) + 7) &= -26(-3) + 13 \\
 7(6 + 7) &= 78 + 13 \\
 7(13) &= 91 \\
 91 &= 91 \checkmark
 \end{aligned}$$



$$\begin{aligned}
 11) \quad & -4x + 4 = -2(10 - x) \\
 & x = 4
 \end{aligned}$$