

Solve Linear Equations Worksheets (Distributive Property)

Find the value of x that makes the equation true.

1. $3(2x - 14) + x = 15 - (-9x - 5)$

2. $8(2x + 9) = 56$

3. $11(x + 10) = 132$

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1. $3(2x - 14) + x = 15 - (-9x - 5)$

$$\begin{aligned}3(2x - 14) + x &= 15 - (-9x - 5) \\6x - 42 + x &= 15 + 9x + 5 \\7x - 42 &= 20 + 9x \\7x - 7x - 42 &= 20 + 9x - 7x \\-42 &= 20 + 2x \\-42 - 20 &= 20 - 20 + 2x \\-62 &= 2x \\-31 &= x\end{aligned}$$

2. $8(2x + 9) = 56$

$$\begin{aligned}8(2x + 9) &= 56 \\ \left(\frac{1}{8}\right)8(2x + 9) &= \left(\frac{1}{8}\right)56 \\ 2x + 9 &= 7 \\ 2x + 9 - 9 &= 7 - 9 \\ 2x &= -2 \\ \left(\frac{1}{2}\right)2x &= \left(\frac{1}{2}\right)-2 \\ x &= -1\end{aligned}$$

3. $11(x + 10) = 132$

$$\begin{aligned}11(x + 10) &= 132 \\ \left(\frac{1}{11}\right)11(x + 10) &= \left(\frac{1}{11}\right)132 \\ x + 10 &= 12 \\ x + 10 - 10 &= 12 - 10 \\ x &= 2\end{aligned}$$