

## Solve Linear Equations Worksheets (Distributive Property)

Find the value of  $x$  that makes the equation true.

1.  $\frac{4}{9} + 4(x - 1) = \frac{28}{9} - (x - 7x) + 1$

2.  $7x - (3x + 5) - 8 = \frac{1}{2}(8x + 20) - 7x + 5$

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$$\begin{aligned}\frac{4}{9} + 4(x - 1) &= \frac{28}{9} - (x - 7x) + 1 \\ \frac{4}{9} - \frac{4}{9} + 4(x - 1) &= \frac{28}{9} - \frac{4}{9} - (x - 7x) + 1 \\ 4x - 4 &= \frac{24}{9} - x + 7x + 1 \\ 4x - 4 &= \frac{33}{9} + 6x \\ 4x - 4 + 4 &= \frac{33}{9} + \frac{36}{9} + 6x \\ 4x &= \frac{69}{9} + 6x \\ 4x - 6x &= \frac{69}{9} + 6x - 6x \\ -2x &= \frac{23}{3} \\ \frac{1}{-2} \cdot -2x &= \frac{1}{-2} \cdot \frac{23}{3} \\ x &= -\frac{23}{6}\end{aligned}$$

2.  $7x - (3x + 5) - 8 = \frac{1}{2}(8x + 20) - 7x + 5$

$$\begin{aligned}7x - (3x + 5) - 8 &= \frac{1}{2}(8x + 20) \\ -7x + 57x - 3x - 5 - 8 &= 4x + 10 - 7x + 5 \\ 4x - 13 &= -3x + 15 \\ 4x - 13 + 13 &= -3x + 15 + 13 \\ 4x &= -3x + 28 \\ 4x + 3x &= -3x + 3x + 28 \\ 7x &= 28 \\ x &= 4\end{aligned}$$