

Linear Equations in Disguise Worksheets

Solve the following equations.

1.
$$\frac{2x + 1}{9} = \frac{1 - x}{6}$$

2.
$$\frac{x + 9}{12} = \frac{-2x - \frac{1}{2}}{3}$$

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1. $\frac{2x+1}{9} = \frac{1-x}{6}$

$$\begin{aligned}\frac{2x+1}{9} &= \frac{1-x}{6} \\ 9(1-x) &= (2x+1)6 \\ 9-9x &= 12x+6 \\ 9-9x+9x &= 12x+9x+6 \\ 9 &= 21x+6 \\ 9-6 &= 21x+6-6 \\ 3 &= 21x \\ \frac{3}{21} &= \frac{21}{21}x \\ \frac{1}{7} &= x\end{aligned}$$

2. $\frac{x+9}{12} = \frac{-2x-\frac{1}{2}}{3}$

$$\begin{aligned}\frac{x+9}{12} &= \frac{-2x-\frac{1}{2}}{3} \\ 12\left(-2x-\frac{1}{2}\right) &= (x+9)3 \\ -24x-6 &= 3x+27 \\ -24x+24x-6 &= 3x+24x+27 \\ -6 &= 27x+27 \\ -6-27 &= 27x+27-27 \\ -33 &= 27x \\ \frac{-33}{27} &= \frac{27}{27}x \\ -\frac{11}{9} &= x\end{aligned}$$

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