Linear Equations in Disguise Worksheets

Solve the following equations.

1. $\dfrac{\frac{1}{3}x - 8}{12} = \dfrac{-2 - x}{15}$

2. $\dfrac{x + 4}{4.5} = \dfrac{3x - 2}{9}$

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Solve the following equations.

1. $\dfrac{\frac{1}{3}x - 8}{12} = \dfrac{-2 - x}{15}$

$$\frac{\frac{1}{3}x - 8}{12} = \frac{-2 - x}{15}$$
$$12(-2 - x) = \left(\frac{1}{3}x - 8\right)15$$
$$-24 - 12x = 5x - 120$$
$$-24 - 12x + 12x = 5x + 12x - 120$$
$$-24 = 17x - 120$$
$$-24 + 120 = 17x - 120 + 120$$
$$96 = 17x$$
$$\frac{96}{17} = \frac{17}{17}x$$
$$\frac{96}{17} = x$$

2. $\dfrac{x + 4}{4.5} = \dfrac{3x - 2}{9}$

$$\frac{x + 4}{4.5} = \frac{3x - 2}{9}$$
$$9(x + 4) = 4.5(3x - 2)$$
$$9x + 36 = 13.5x - 9$$
$$9x + 36 + 9 = 13.5x - 9 + 9$$
$$9x + 45 = 13.5x$$
$$9x - 9x + 45 = 13.5x - 9x$$
$$45 = 4.5x$$
$$10 = x$$