Linear Equations in Disguise Worksheets

Solve the following equations.

1. $\dfrac{\frac{1}{2}x + 6}{3} = \dfrac{x - 3}{2}$

2. $\dfrac{7 - 2x}{6} = \dfrac{x - 5}{1}$

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1. $\dfrac{\frac{1}{2}x + 6}{3} = \dfrac{x - 3}{2}$

$$\dfrac{\frac{1}{2}x + 6}{3} = \dfrac{x - 3}{2}$$
$$3(x - 3) = 2\left(\frac{1}{2}x + 6\right)$$
$$3x - 9 = x + 12$$
$$3x - 9 + 9 = x + 12 + 9$$
$$3x = x + 21$$
$$3x - x = x - x + 21$$
$$2x = 21$$
$$x = \frac{21}{2}$$

2. $\dfrac{7 - 2x}{6} = \dfrac{x - 5}{1}$

$$\dfrac{7 - 2x}{6} = \dfrac{x - 5}{1}$$
$$6(x - 5) = (7 - 2x)1$$
$$6x - 30 = 7 - 2x$$
$$6x - 30 + 30 = 7 + 30 - 2x$$
$$6x = 37 - 2x$$
$$6x + 2x = 37 - 2x + 2x$$
$$8x = 37$$
$$\frac{8}{8}x = \frac{37}{8}$$
$$x = \frac{37}{8}$$

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