

M8 - 10.5 - " $\pm ax + b = c, \frac{x}{a} + b = c$ " Notes

Solve for x

$$6x + 8 = 50$$

$$\begin{array}{r} 6x + 8 = 50 \\ -8 \quad -8 \end{array}$$

Subtract 8 from both sides

$$6x = 42$$

$$\frac{6x}{6} = \frac{42}{6}$$

Divide both sides by 6

$$\frac{\cancel{6}x}{\cancel{6}} = \frac{42}{6}$$

Cross it off

$$x = \frac{42}{6}$$

$$x = 7$$

Short Form

$$\begin{array}{l} 6x + 8 = 50 \\ 6x = 50 - 8 \\ 6x = 42 \\ \boxed{x = 7} \end{array}$$

Check Answer

$$\begin{array}{l} 6x + 8 = 50 \\ 6(7) + 8 = 50 \\ 42 + 8 = 50 \\ 50 = 50 \quad \checkmark \end{array}$$

Solve for x

$$\frac{x}{3} - 8 = -3$$

$$\begin{array}{r} \frac{x}{3} - 8 = -3 \\ +8 \quad +8 \end{array}$$

Add 8 to both sides

$$\frac{x}{3} = 5$$

$$\frac{\cancel{x}}{\cancel{3}} \times 3 = 5 \times 3$$

Multiply both sides by 3

$$x = 5 \times 3$$

$$x = 15$$

Short Form

$$\begin{array}{l} \frac{x}{3} - 8 = -3 \\ \frac{x}{3} = -3 + 8 \\ \frac{x}{3} = 5 \\ x = 15 \end{array}$$

Check Answer

$$\begin{array}{l} \frac{x}{3} - 8 = -3 \\ \frac{15}{3} - 8 = -3 \\ 5 - 8 = -3 \\ -3 = -3 \quad \checkmark \end{array}$$