

3.5a Two -Step Equations

*move constants before coefficients

Ex. 1 $-3x + 5 = 2$

$$\begin{array}{r} -3x + 5 = 2 \\ -5 \quad -5 \\ \hline -3x = -3 \\ \div -3 \quad \div -3 \\ \hline x = 1 \end{array}$$

$3(1) + 5 = 2$
 $-3 + 5 = 2$
 $2 = 2$

Ex. 2 $-5c + 9 = -16$

$$\begin{array}{r} -5c + 9 = -16 \\ -9 \quad -9 \\ \hline -5c = -25 \\ \div -5 \quad \div -5 \\ \hline c = 5 \end{array}$$

$-5(5) + 9 = -16$
 $-25 + 9 = -16$
 $-16 = -16$

Ex. 3 $3y - 12 = 9$

$$\begin{array}{r} 3y - 12 = 9 \\ +12 \quad +12 \\ \hline 3y = 21 \\ \div 3 \quad \div 3 \\ \hline y = 7 \end{array}$$

$3(7) - 12 = 9$
 $21 - 12 = 9$
 $9 = 9$

Ex. 4 $\frac{x}{8} - \frac{1}{2} = -\frac{7}{2}$

$$\begin{array}{r} \frac{x}{8} - \frac{1}{2} = -\frac{7}{2} \\ +\frac{1}{2} \quad +\frac{1}{2} \\ \hline \frac{x}{8} = -\frac{6}{2} \\ \div 8 \quad \div 8 \\ \hline x = -24 \end{array}$$

$\frac{(24)}{8} - \frac{1}{2} = -\frac{7}{2}$
 $3 - \frac{1}{2} = -\frac{7}{2}$
 $-\frac{7}{2} = -\frac{7}{2}$

Ex. 5 $\frac{m}{2} + 6 = 10$

$$\begin{array}{r} \frac{m}{2} + 6 = 10 \\ -6 \quad -6 \\ \hline \frac{m}{2} = 4 \\ \cdot 2 \quad \cdot 2 \\ \hline m = 8 \end{array}$$

$\frac{(8)}{2} + 6 = 10$
 $4 + 6 = 10$
 $10 = 10$

Ex. 6 $\frac{2}{5} + 4a = -\frac{6}{5}$

$$\begin{array}{r} \frac{2}{5} + 4a = -\frac{6}{5} \\ -\frac{2}{5} \quad -\frac{2}{5} \\ \hline 4a = -\frac{8}{5} \\ \div 4 \quad \div 4 \\ \hline a = -\frac{2}{5} \end{array}$$

$\frac{2}{5} + 4(-\frac{2}{5}) = -\frac{6}{5}$
 $\frac{2}{5} + \frac{-8}{5} = -\frac{6}{5}$
 $-\frac{6}{5} = -\frac{6}{5}$