

3.5b Multi-Step Equations

Combining Like Terms (variables)

Ex. 1 $3y - 8y = 25$

$$\begin{array}{r} \cancel{3y} - \cancel{8y} = 25 \\ \hline -5y = 25 \\ \hline \end{array}$$

$$\boxed{y = -5}$$

$$\begin{array}{l} 3(-5) - 8(-5) = 25 \\ -15 + 40 = 25 \\ 25 = 25 \end{array}$$

Ex. 2 $11x + 3x = -42$

$$\begin{array}{r} \cancel{11x} + \cancel{3x} = -42 \\ \hline 14x = -42 \\ \hline \end{array}$$

$$\boxed{x = -3}$$

$$\begin{array}{l} 11(-3) + 3(-3) = -42 \\ -33 - 9 = -42 \\ -42 = -42 \end{array}$$

Ex. 3 $-4(m+3) = 24$

$$-4 \cdot m + -4 \cdot 3 = 24$$

$$\begin{array}{r} -4m - 12 = 24 \\ \hline \end{array}$$

$$\begin{array}{r} -4m = 36 \\ \hline \end{array}$$

$$\boxed{m = -9}$$

$$-4(-9 + 3) = 24$$

$$-4(-6) = 24$$

$$24 = 24$$

Ex. 4 $6(-2+x) = -18$

$$6 \cdot -2 + 6 \cdot x = -18$$

$$\begin{array}{r} -12 + 6x = -18 \\ \hline \end{array}$$

$$\begin{array}{r} 6x = -6 \\ \hline \end{array}$$

$$\boxed{x = -1}$$

$$\begin{array}{l} 6(-2 + (-1)) = -18 \\ 6(-3) = -18 \\ -18 = -18 \end{array}$$

HW: p. 112 #1-5, 19-25, 27-39 odd