

3 - 4

**Solving Multi-Step
Equations**



****move whatever is farthest from
the variable first**

****the number attached to the variable
is the last to move**

Ex: $\frac{x}{3} + 4 = 9$
~~4~~ ~~-4~~

~~$\frac{x}{3}$~~ = 5 • 3

$x = 15$

Ex: $5a - 15 = 5$
~~15~~ ~~+15~~

~~$5a$~~ = $\frac{20}{5}$

$a = 4$

$$\text{Ex: } \frac{2}{5}x + 2 = 6$$

$$\frac{5}{2} \cdot \frac{2}{5}x = \frac{4}{1} \cdot \frac{5}{2}$$

$$x = \frac{20}{2} \quad x = 10$$

$$\text{Ex: } \underline{7x + 6} - \underline{2x + 3} = 34$$

$$5x + 9 = 34$$

$$\frac{5}{5}x = \frac{25}{5}$$

$$x = 5$$

$$\text{Ex: } 2(x+7) = 36$$

$$\begin{array}{r} 2x + 14 = 36 \\ -14 \quad -14 \\ \hline \end{array}$$

$$\textcircled{x=11} \quad \frac{2x}{2} = \frac{22}{2}$$

$$\frac{2(x+7) = 36}{2} = \frac{36}{2}$$

$$\begin{array}{r} x + 7 = 18 \\ -7 \quad -7 \\ \hline \end{array}$$

$$\textcircled{x=11}$$

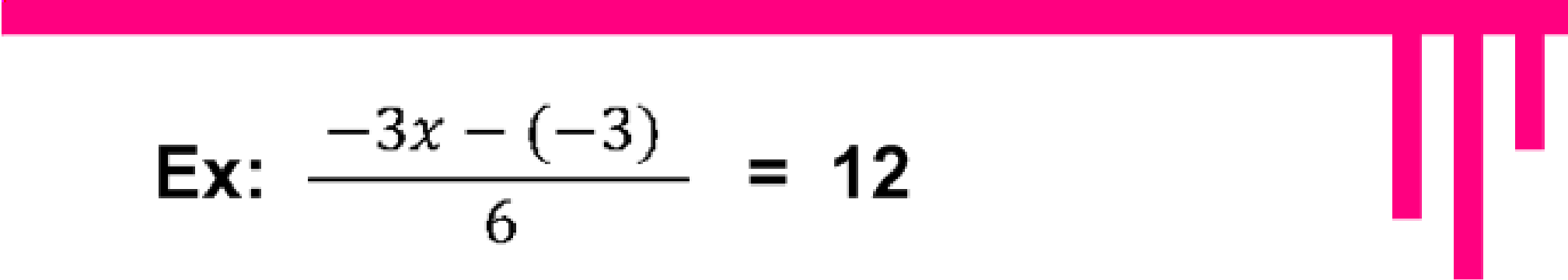
$$\text{Ex: } \frac{-3x + (\rightarrow 3)}{6} = 12$$

$$\cancel{\phi} \cdot \frac{-3x + 3}{6} = 12 \cdot 6$$

$$\begin{array}{r} -3x + 3 = 72 \\ -3 \quad -3 \\ \hline \end{array}$$

$$\frac{-3x = 69}{-3} = \frac{69}{-3}$$

$$\textcircled{x = -23}$$



Ex: $\frac{-3x - (-3)}{6} = 12$

Write an equation and solve.

Ex: Twenty-nine is thirteen added to four times a number. Find the number.

$$\begin{array}{r} 29 = 13 + 4x \\ -13 \quad -13 \end{array}$$

$$\frac{16}{4} = \frac{4x}{4}$$

$$4 = x$$

$$\begin{array}{r} 12 = 6 - 2x \\ -6 \quad -6 \end{array}$$

$$\frac{6}{-2} = \frac{-2x}{-2}$$

$$-3 = x$$



Homework:

3-4 WS