

Two-Step Equation. Contains two operations which requires two-steps to isolate the variable

Remember: 1) Use inverse operations to isolate the variable!

• use order of operations backwards (add/subtract first, then multiply/divide)

2) whatever you do to one side, you must do to the other.

3) always check your solution and graph!

Ex. 1 Solve each equation, and check the solution. Graph the solution on a number line.

A)  $4x + 3 = 19$

$$\begin{array}{r} 4x + 3 = 19 \\ -3 \quad -3 \\ \hline 4x = 16 \end{array}$$

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

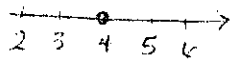
$x = 4$

Check:  $4x + 3 = 19$

$$4(4) + 3 = 19$$

$$16 + 3 = 19$$

$$\checkmark 19 = 19$$



B)  $6 - 5y = 26$

$$\begin{array}{r} 6 - 5y = 26 \\ -6 \quad -6 \\ \hline -5y = 20 \end{array}$$

$$\frac{-5y}{-5} = \frac{20}{-5}$$

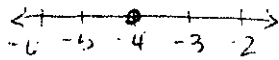
$y = -4$

Check:  $6 - 5y = 26$

$$6 - 5(-4) = 26$$

$$6 + 20 = 26$$

$$\checkmark 26 = 26$$



C)  $-48 = -8 - \frac{y}{2}$

$$\begin{array}{r} -48 = -8 - \frac{y}{2} \\ +8 \quad +8 \\ \hline -40 = -\frac{y}{2} \end{array}$$

$$-2 \cdot -40 = -\frac{y}{2} \cdot \frac{2}{1}$$

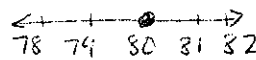
$80 = y$   $y = 80$

Check:  $-48 = -8 - \frac{y}{2}$

$$-48 = -8 - \frac{80}{2}$$

$$-48 = -8 - 40$$

$$\checkmark -48 = -48$$



D)  $-2s - 2 = 4$

$$\begin{array}{r} -2s - 2 = 4 \\ +2 \quad +2 \\ \hline -2s = 6 \end{array}$$

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

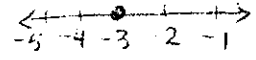
$s = -3$

Check:  $-2s - 2 = 4$

$$-2(-3) - 2 = 4$$

$$6 - 2 = 4$$

$$\checkmark 4 = 4$$



E)  $9 + \frac{1}{3}x = -2$

$$\begin{array}{r} 9 + \frac{1}{3}x = -2 \\ -9 \quad -9 \\ \hline \frac{1}{3}x = -11 \end{array}$$

$$\frac{3}{1} \cdot \frac{1}{3}x = -11 \cdot \frac{3}{1}$$

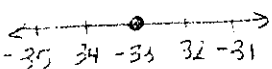
$x = -33$

Check:  $9 + \frac{1}{3}x = -2$

$$9 + \frac{1}{3}(-33) = -2$$

$$9 + -11 = -2$$

$$\checkmark -2 = -2$$



F)  $-4 = -1 + \frac{1}{4}n$

$$\begin{array}{r} -4 = -1 + \frac{1}{4}n \\ +1 \quad +1 \\ \hline -3 = \frac{1}{4}n \end{array}$$

$$4 \cdot -3 = \frac{1}{4}n \cdot \frac{4}{1}$$

$-12 = n$   $n = -12$

Check:  $-4 = -1 + \frac{1}{4}n$

$$-4 = -1 + \frac{1}{4}(-12)$$

$$-4 = -1 + -3$$

$$\checkmark -4 = -4$$

