

## Steps to Solve Multi-Step Equations:

1. **DISTRIBUTE** numbers outside of the parentheses to **EVERY NUMBER** inside the parentheses using **MULTIPLICATION**
2. **COMBINE** Like Terms (terms with the SAME variable)
3. **ELIMINATE** variables that are on Opposite sides of the equation using **OPPOSITE** operations
4. **SOLVE** For x as if you were solving a two step equation.

### Examples:

1.  $4(3x-6)=36$

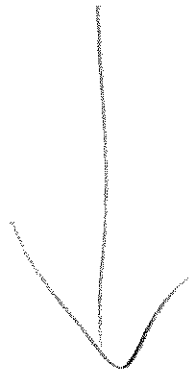
$$\begin{array}{r} 12x - 24 = 36 \\ +24 \quad +24 \\ \hline 12x = 60 \\ \frac{12x}{12} = \frac{60}{12} \\ \hline \boxed{x = 5} \end{array}$$

2.  $3x + 6x + 6 = 33$

$$\begin{array}{r} 9x + 6 = 33 \\ -6 \quad -6 \\ \hline 9x = 27 \\ \frac{9x}{9} = \frac{27}{9} \\ \hline \boxed{x = 3} \end{array}$$

more examples on  
next page 

Examples



$$\textcircled{6} \quad \frac{n+2}{3} = 2$$

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

$$\textcircled{7} \quad 2 = \frac{s+2}{2}$$

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

$$\textcircled{8} \quad 3(n-6) = 9$$

$$\begin{array}{r} 3n - 18 = 9 \\ +18 \quad +18 \\ \hline 3n = 27 \\ \div 3 \quad \div 3 \\ \hline \boxed{n = 9} \end{array}$$

$$\textcircled{9} \quad 3(u+2) = 15$$

$$3u + 6 = 15$$

$$\begin{array}{r} 3u = 9 \\ \div 3 \quad \div 3 \\ \hline u = 3 \end{array}$$

$$\textcircled{3.} \quad \begin{array}{r} 3x + 2 = 4x - 3 \\ + 3 \quad \quad + 3 \end{array}$$

$$\begin{array}{r} - 3x + 5 = 4x \\ - 3x \quad \quad - 3x \end{array}$$

$$5 = 1x$$

$$\boxed{5 = x}$$

OR

$$\begin{array}{r} 3x + 2 = 4x - 3 \\ - 3x \quad \quad - 3x \end{array}$$

$$2 = x - 3$$

$$+ 3$$

$$\boxed{5 = x}$$

$$\textcircled{4.} \quad \frac{d-7}{2} = 1$$

$$\frac{2(d-7)}{2} = 1(2)$$

$$\begin{array}{r} d-7 = 2 \\ + 7 \quad + 7 \end{array}$$

$$\boxed{d = 9}$$

$$\textcircled{5.} \quad \frac{p+1}{2} = 1$$

$$\frac{p+1}{2} = \frac{2}{2}$$

$$\begin{array}{r} 2 = p+1 \\ - 1 \quad \quad - 1 \end{array}$$

$$\boxed{1 = p}$$

