

How do you solve multi-step linear equations?

$$4(x-3) + 2x = 36 + 2x$$

① Look for distribution 1st

$$\underline{4x} - 12 + \underline{2x} = 36 + 2x$$

② Combine Like Terms
* one side @ a time

$$\underline{6x} - 12 = 36 + 2x$$

$$\underline{+12} \quad \underline{+12}$$

③ Add or subtract in order to isolate the variable
* Letters = #'s

$$\underline{6x} = 48 + 2x$$

$$\underline{-2x} \quad \underline{-2x}$$

$$4x = 48$$

④ Multiple or Divide to solve for x

$$\frac{4x}{4} = \frac{48}{4}$$

$$x = 12$$

S
A
D
M
E
P

* USE INVERSES

+ \rightarrow -
- \leftarrow +
* \rightarrow \div
- \leftarrow \times

EX: $x - 5 = 10 + x$

$$\begin{array}{r} x - 5 = 10 + x \\ +5 \quad +5 \\ \hline x = 15 + x \\ -x \quad -x \\ \hline 0 = 15 \end{array}$$

0 = 15 No solution

15 = 15 Infinitely Many