Variables on Both Sides

Math 7+

Steps To Solving Equations with Variables on Both Sides

* $2x - 3 = 3(x + 7) - 4$

1) Distribute

2) Combine like terms

3) Eliminate the Variable on One Side

4) Add or Subtract

5) Multiply or Divide

To Complete Step #3:

- Identify the term with a variable that has the smallest coefficient.

- Then add or subtract (on both sides) to eliminate that whole term from the equation.

* $3x + 7 = -19 + 2x$

$-2x \quad -2x$

$1x + 7 = -19$

$-7 \quad -7$

$1x = -26$

* $2x - 3 = 3(x + 7) - 4$

$2x - 3 = 3x + 21 - 4$

$2x - 3 = 3x + 17$

$-2x \quad -2x$

$-3 = 1x + 17$

$-17 \quad -17$

$-20 = 1x$

$3(x - 5) = 7x + 20$

$-3 - 17x = 52 - 6x$

$5x = 3x - 6$

$-3x \quad -3x$

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

$x = -3$

$-15 = -15$

$3x - 8 = 13 - 4x$

$-3x \quad -3x$

$-8 = 13 - 7x$

$-13 \quad -13$

$\frac{-21}{-7} = \frac{-7x}{-7}$

$3 = x$

$-4(x - 7) = 12 - 6x$

$-4x + 28 = 12 - 6x$

$+6x \quad +6x$

$2x + 28 = 12$

$-28 \quad -28$

$\frac{2x}{2} = \frac{-16}{2}$

$x = -8$

$3x - (-5) = -2 + 7x + 7$

$3y + 10.5 = 6.5 + 2.5y + 3.1$