Topics Covered: Manipulating equations, substitution, and solving for a variable

Write out the steps required to make the equation on the left the same as the equation on the right	
EXAMPLE: **STEPS** 1. $2x + 14 = 4y - 10$ 2. $2x + 14 + 10 = 4y - 10 + 10$ Add 10 to both sides 3. $2x + 24 = 4y$ 4. $\frac{2x+24}{4} = \frac{4y}{4}$ Divide both sides by 4 5. $\frac{1}{2}x + 6 = y$ Done! Matches equation on right →	$\frac{1}{2}x + 6 = y$
$-3y + 15 = 4y - 5$	$-y + 12 = 6y - 8$
$2x + 4y = 12$	$y = -\frac{1}{2}x + 3$
$y = -\frac{3}{2}x + 6$	$\frac{3}{2}x + y = 6$
$(x + 9)^2 = 10$	$x = -9 + \sqrt{10}$

$2x + 14 = 4y - 10$	$2x - 4y = -24$
$-4y + 12 = 3y - 10$	$-y + 6 = 6y - 16$
$5x + 2y = 12$	$y = -\frac{5}{2}x + 6$
$y = -\frac{4}{5}x + 6$	$4x + 5y = 30$
$(x - 16)^2 = 14$	$x = 16 + \sqrt{14}$

Substitute the given values into the given equation	
$m = -\frac{2}{3}$ and $b = -2$ $y = mx + b$	**EXAMPLE:** $m = -3,\ y = 4,\ and\ x = 3$ $y = mx + b$ $4 = (-3)(3) + b$ Replace each variable in the equation with the number it is equal to. If no number is given, keep the variable the same.
$m = -3$ and $b = 6$ $y = mx + b$	$y = -\frac{5}{3}$ and $x = 2$ $5x + 3y = C$
$y = \frac{2}{3},\ m = 5$ and $b = 4$ $y = mx + b$	$a = 3,\ b = 6,\ and\ c = -1$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
$m = -3$ and $b = 6$ $y = mx + b$	$y_1 = 4,\ y_2 = 2,\ x_1 = -4,\ and\ x_2 = -3$ $m = \frac{(y_1 - y_2)}{(x_1 - x_2)}$

$m = -\frac{1}{6}\ and\ b = -\frac{3}{4}$ $y = mx + b$	$m = -7,\ y = -1,\ and\ x = -3$ $y = mx + b$
$m = 8\ and\ b = 3$ $y = mx + b$	$y = -\frac{5}{3}\ and\ x = -\frac{4}{5}$ $5x + 3y = C$
$y = \frac{3}{4},\ m = -\frac{2}{5}\ and\ b = 2$ $y = mx + b$	$a = 5,\ b = -5,\ and\ c = -1$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
$m = 6\ and\ b = -7$ $y = mx + b$	$y_1 = 2,\ y_2 = 1,\ x_1 = -5,\ and\ x_2 = 8$ $m = \frac{(y_1 - y_2)}{(x_1 - x_2)}$

Solve for the indicated variable	
Solve for x $(x - 7)^2 = 16$	**EXAMPLE:** Solve for y $6x + 3y = 24$ $6x - 6x + 3y = -6x + 24$ Subtract 6x $3y = -6x + 24$ $\frac{3y}{3} = \frac{-6x+24}{3}$ Divide by 3 $y = -2x + 8$ DONE
Solve for x $0 = -3x + 30$	Solve for x $\frac{2}{5}x + 2(6) = 14$
Solve for y $4(5) + 3y = 31$	Solve for y $2x - 10y = 2$

Solve for x $(2x - 4)^2 = 16$	Solve for y $-2x + 4y = 16$
Solve for x $0 = 5x + 10$	Solve for x $\frac{2}{3}x + 6(5) = 14$
Solve for y $4 + (-5) + 2y = 31$	Solve for y $3x - 9y = 6$