

Tips for Solving Equations

Solving an equation is a series of steps where you can apply an operation to both sides of an equality until you have an equation that equates a variable with a value. It is the process of taking an equation such as

$$4(x + 5) = 48,$$

and from this equation, determining that

$$x = 7.$$

Adding to Both Sides

Example One

$$\begin{aligned}x + 10 &= 15 \\x + 10 + 5 &= 15 + 5 \\x + 15 &= 20\end{aligned}$$

Example Two

$$\begin{aligned}x - 15 &= 7 \\x - 15 + 15 &= 7 + 15 \\x &= 22\end{aligned}$$

Example Three

$$\begin{aligned}5\left(\frac{x}{2} - 12\right)^2 - 22 &= 13 \\5\left(\frac{x}{2} - 12\right)^2 - 22 + 22 &= 13 + 22 \\5\left(\frac{x}{2} - 12\right)^2 &= 35\end{aligned}$$

Example Four

This doesn't work very well.

$$\begin{aligned}4(x - 8) &= 12 \\4(x - 8) + 8 &= 12 + 8\end{aligned}$$