

ANSWER KEY: 2-STEP EQUATIONS

Example 1: $2x + 4 = 8$.

GOAL: Get the variable (X) by itself.

Step 1: Get the term that has the variable alone. So get 2x by itself. To get 2x by itself, you must get rid of the 4!

The 4 is being added to 2x. To get rid of the 4 you must do the inverse (opposite) of what is already being done. Inverse of addition is subtraction.

$$\begin{array}{r} 2x + 4 = 8 \\ \downarrow \quad -4 = -4 \\ 2x \quad = 4 \end{array}$$

Step 2: Get the variable (x) by itself.

The operation between 2 and x is: multiplication. To get rid of the 2 we must do the inverse operation. The inverse operation is: division.

$$\frac{2x}{2} = \frac{4}{2}$$

$$x = \underline{2}$$

Example 2: $-\frac{w}{2} + 6 = 7$

GOAL: Get the variable (w) by itself.

Step 1: Get the term that has the variable alone. So get $-\frac{w}{2}$ by itself. To get $-\frac{w}{2}$ by itself, you must get rid of the 6!

The operation between $-\frac{w}{2}$ and 6 is addition. To get rid of 6 you must do the inverse (opposite) of what is already being done. Inverse operation is subtraction.

$$\begin{array}{r} -\frac{w}{2} + 6 = 7 \\ \quad -6 \quad -6 \\ \hline -\frac{w}{2} = 1 \end{array}$$

Step 2: Get the variable (w) by itself.

The operation between w and -2 is: division. To get rid of the -2 we must do the inverse operation. The inverse operation is: multiplication.

$$-2 \times -\frac{w}{2} = \underline{1 \times -2}$$

$$w = \underline{-2}$$