

# TWO-STEP EQUATIONS

# ANSWERS

YOU ARE TRYING TO SEPARATE THE NUMBERS AND VARIABLES, BUT BEFORE YOU START MOVING THINGS AROUND CAREFULLY LOOK AT THE EQUATION AND THINK ABOUT WHICH MOVES WOULD SEPARATE THE NUMBERS AND VARIABLES IN THE SHORTEST AMOUNT OF TIME.

THE EQUATION TO THE RIGHT COULD BE SOLVED A FEW DIFFERENT WAYS, BUT WHICH WAY WOULD BE THE EASIEST AND FASTEST?

WE ACTUALLY DID THE PROBLEM WITH TOO MANY STEPS. DO YOU SEE HOW WE COULD HAVE DONE THIS PROBLEM QUICKER? WHAT IS WRONG WITH DOING STEP #1 FIRST? BELOW IS THE SAME PROBLEM. HOW WOULD YOU SOLVE IT?

$$6n = 2n + 16$$

*This problem was done with too many steps.*

Steps

$$6n = 2n + 16$$

#1

$$\begin{array}{r} 6n = 2n + 16 \\ -16 \quad -16 \\ \hline -16 + 6n = 2n + 0 \end{array}$$

#2

$$\begin{array}{r} -16 + 6n = 2n \\ -6n \quad -6n \\ \hline -16 + 0 = -4n \\ -16 = -4n \end{array}$$

#3

$$\begin{array}{r} \div -4 \quad \div -4 \\ \hline 4 = 1n \\ \hline 4 = n \end{array}$$

Now your turn. Describe what steps you would take to solve the equation.

1.  $\frac{t}{6} - 9 = 15$

First I would add nine to both sides.

Then I would MULTIPLY BOTH SIDES BY 6.

2.  $45 - 7x = 10$

First I would SUBTRACT BOTH SIDES BY 45.

Then I would DIVIDE BOTH SIDES BY NEGATIVE 7.

3.  $56 = 37 + \frac{h}{5}$

First I would SUBTRACT BOTH SIDES BY 37.

Then I would MULTIPLY BOTH SIDES BY 5.

4.  $9w = 56 - 5w$

First I would ADD 5w TO BOTH SIDES.

Then I would DIVIDE BOTH SIDES BY 14.

Solve the equations.

5.  $9g + 98 = 2g$

$g = -14$

6.  $72 - 3k = -162$

$k = 78$

7.  $82 = 42 + \frac{z}{4}$

$z = 160$

8.  $2e = 95 - 17e$

$e = 5$

9.  $42 - \frac{h}{5} = 187$

$h = -725$

10.  $91 + 7u = 21u$

$u = 6.5$

11.  $70 - 9n = 781$

$n = -79$

12.  $8b = -9 + 23b$

$b = 0.6$

13.  $\frac{x}{8} - 12 = 12$

$x = 192$