**Solving Linear Equations with WolframAlpha**

When solving linear equations in one variable, we use a series of steps.

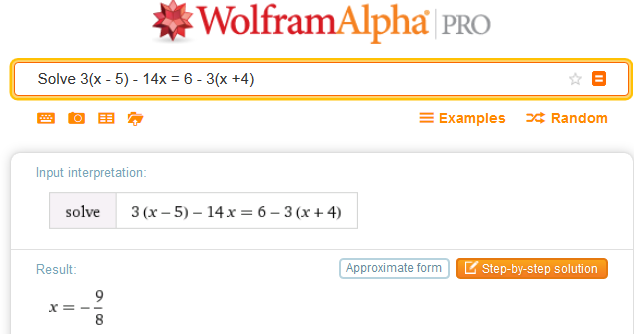
**Step 1** Simplify both sides of the equation

**Step 2** Collect the variable terms on one side of the equation and the constant terms on the other

**Step 3** Make the coefficient on the variable term equal to 1.

Many computational systems will produce the final result of **Step 3**,  *x* = \_\_\_ , but few will show the intermediate steps.

When we use WolframAlpha to solve we see the result *and* a small button labeled "Step-by-step solution."



If we use the button, we see the steps from WolframAlpha:

**Step 1** Simplify both sides of the equation

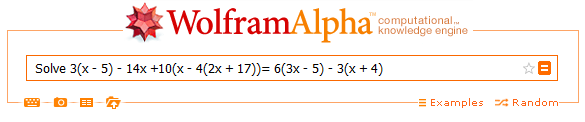
The WolframAlpha "possible" steps resemble our 3 steps.

**Step 1**

For this example, do you think WolframAlpha shows enough "work" in solving the equation?

Let's alter the equation and look at the steps shown by WolframAlpha vs. your own steps.

Solve 



1. Show your steps to solve this equation

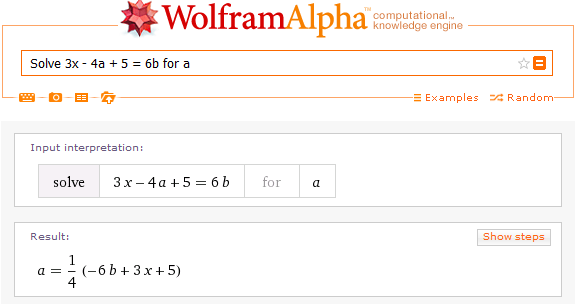


Was WolframAlpha helpful in solving this equation? Would you understand how to solve this equation using only WolframAlpha?

Is knowing the answer to an equation helpful in showing the "work" in an equation?

We may also solve literal equations for a specified variable using WolframAlpha.

Solve  for *a*



2. Show your steps to solve this equation and compare them to WolframAlpha's solution.

 for *a*

3. Alter the literal equation slightly and solve for *a*. Verify your solution with WolframAlpha

Solve  for *a*

Why does WolframAlpha add the restriction to its answer?

Were the steps shown by WolframAlpha helpful to your solution?