

Math Write-Ups

One important thing to realize is that mathematics is not only about numbers and how you can manipulate them, but more importantly answering the “why” question. This realization will help you to write any type of math paper, whether it is a proof or even original research.

- **Step 1: Restate the problem in your own words.**

Ex: Your assignment says, “Solve for x.” You might write, “In this solution, we will solve the equation $3x^2 + 6x - 9 = 0$ for x.”

- **Step 2: Let the reader know how the problem will be approached.**

Ex: “Since the equation is a quadratic equation, we can use the quadratic formula, which states

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}, \text{ where } a=3, b=6, \text{ and } c=-9.”$$

Notice the variables are clearly defined in the paragraph.



- **Step 3: Show ALL your work**

Ex: “Using the quadratic equation and substituting the variables into the correct places, we have the equation

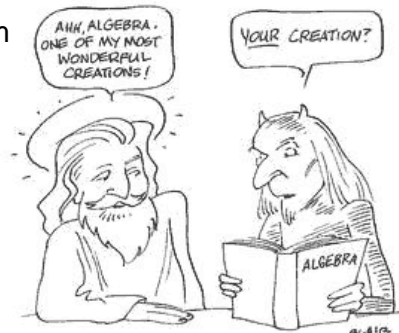
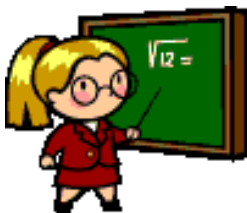
$$x = \frac{-(6) \pm \sqrt{6^2 - 4(3)(-9)}}{2(3)}$$

Using algebra, we see the equation transform into:

$$x = \frac{-6 \pm \sqrt{36+108}}{12}$$

$$x = \frac{-6 \pm \sqrt{144}}{12}$$

$$x = \frac{-6 \pm 12}{12}$$



DISAGREEMENT OVER THE ORIGIN OF ALGEBRA

From this point, we must separate the equation into two parts because of the plus and minus. Doing this, we get



$$x = \frac{-6+12}{12}$$

and

$$x = \frac{-6-12}{12}$$

Looking at the first equation, $x = \frac{-6+12}{6}$, we have $x=1$; while the second equation, $x = \frac{-6-12}{6}$, we have $x=-3$."

- **Step 4: State your solution and tell why this solution is the correct solution.**

Ex: "In this case, both solutions are correct because after substituting each possible solution in the equation, we get the equations to be equal to zero."

Note: It would be in your best interest to actually show the work in the substitutions.

- **Step 5: Conclude**

This paragraph is like a conclusion paragraph to any other type of paper.

Let the reader know your original goal, how you solved the problem, and your solutions.

Ex: "We found that the solutions of the quadratic equation,

$3x^2 + 6x - 9 = 0$ are $x=1$ and $x=-3$ by using the quadratic equation."

