Quadratic Formula Review (Assignment 7)

Solve each equation on this worksheet with the quadratic formula.

1. $x^2 + x - 6 = 0$

2. $x^2 - 4x + 2 = 0$

3. How many solutions were there for each equation? Do you think there will always be this many solutions? Why or why not?

4. $x^2 + 2x + 1 = 0$

5. $4x^2 - 4x + 1 = 0$

6. Why was there only one solution to each of the two equations above? Shouldn't there be two as a result of the $\pm$ in the quadratic formula?

7. Do you think it is possible for a quadratic equation to have no solution? Why or why not?

8. Use the quadratic formula to determine how many solutions there are to the equation $2x^2 + 3x + 2 = 0$.

9. a) According to the quadratic formula, if $ax^2 + bx + c = 0$, we know that $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. Which part of this formula determines how many solutions there will be?

b) For there to be exactly 1 solution, what does this part have to equal?

c) For there to be exactly no solution, what must be true?

d) For there to be two solutions, what must be true?

For the following four equations, you do not need to solve. Just determine how many solutions there will be y calculating $b^2 - 4ac$.

10. $3x^2 - 6x + 3 = 0$

11. $2x^2 + x - 1 = 0$

12. $x^2 + x + 3 = 0$

13. $2x^2 - 5x + 1 = 0$