NAME:_____________________________

1. Which method would you use to solve the equation $3x^2 - 12 = 0$? Justify your reasoning.

2. Write a quadratic equation that has solutions of -5.5 and 5.5 in which $a > 1$ and $c > 1$.

3. Make up your own quadratic equation. Solve it by completing the square.

4. Write a quadratic equation that will have only one solution and can be easily solved by completing the square.

5. How can completing the square help write a quadratic equation in vertex form?

NAME:______________________________

6. Explain how to use the quadratic formula to solve a quadratic equation. Include an example.

7. Suppose you cannot factor $x^2 + bx + 6$ into the product of two binomials. What must be true about *b*?

8. Explain how to use a graph to find the number of solutions to a quadratic equation.

[1] Answers may vary. Sample: Factoring because the equation can be easily factored.

[2] $2x^2 = 60.5$

[3] Answers may vary. Sample: $x^2 + 4x = 21$; solution: $x = 3, -7$

[4] Answers may vary. Sample: $x^2 + 10x = -25$

[5] Answers may vary. Sample: the vertex form of a quadratic equation is $y = a(x-h)^2 + k$. By completing the square using the x^2 term and the x-term, you can get the expression $(x-h)^2$.

[6] Write an equation in the form $ax^2 + bx + c = 0$. Substitute a, b, and c in the quadratic formula and evaluate. For example, for the equation $x^2 + 2x + 1 = 0$, $a = 1$, $b = 2$, and $c = 1$. Substituting into the quadratic formula gives $\frac{-2 \pm \sqrt{2^2 - 4(1)(1)}}{2(1)} = \frac{-2}{2} = -1$.

[7] It cannot be $-7, -5, 5,$ or 7.

[8] The number of x-intercepts tells you the number of solutions. Two x-intercepts means two solutions, one x-intercept means one solution, and zero x-intercepts means no solutions.