Assignment: The Discriminant

Part I: Practice Finding the Discriminant

Find the value of the discriminant for each quadratic equation below. Show all steps needed to write the answer in simplest form, including substituting the values of *a*, *b*, and *c* in the discriminant formula. Then use the value to determine how many real number solutions each equation has.

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

2. $3x^2 + 2x + 1 = 0$

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

4. $5x^2 + x = 4$

5. $2x^2 - 3x = -5$

6. $x^2 - x = 12$

7. $x^2 - 2x = -1$

Part II: Writing Quadratic Equations

Follow the directions for each problem to write a quadratic equation that has the given number of solutions. Be sure to show all the work leading to your answer.

8. Think of another quadratic equation that has two (2) real number solutions. Write the equation in $ax^2 + bx + c = 0$ form. Then find the value of the discriminant to support your answer.

9. Think of another quadratic equation that has one (1) real number solution. Write the equation in $ax^2 + bx + c = 0$ form. Then find the value of the discriminant to support your answer.

10. Think of another quadratic equation that has no (0) real number solutions. Write the equation in $ax^2 + bx + c = 0$ form. Then find the value of the discriminant to support your answer.