**4.4 – THE QUADRATIC FORMULA**

Any quadratic equation can be written in general form : .

The sign of the **discriminant** of a quadratic expression tells us the number of zeros that it has.

Property: If , the expression has 2 distinct real roots.

If , the expression has 1 double real root.

If , the expression has no real root.

Examples: Determine the number of solutions of the following equations:  
a) b) c)

The values of the roots are given by the **quadratic formula**:

Examples : a)   
  
  
  
  
 b)

c)

Note: If the discriminant is a perfect square, the roots will be rational. It also means that you could have solved by factoring.

Hwk : p 254 # 2, 3, 5, 7, 9, 10, 12, 14, 15, 17 – 20.