The quadratic formula states that the solutions (roots) of are

The quantity UNDER the radical sign, \_\_\_\_\_\_\_, is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

We can determine the nature of the roots without solving the equation, just by investigating the discriminant.

If the discriminant is positive, \_\_\_\_\_\_

If the discriminant is zero,\_\_\_\_\_\_\_

If the discriminant is negative \_\_\_\_\_\_\_\_

Example 1: Determine the nature of the roots:

a) b) c)

Example 2: Find the value(s) of m so that has two equal real roots.

Example 3: Find the value(s) of m so that has no real roots.

Example 4: Find the value(s) of m so that has two distinct real roots.