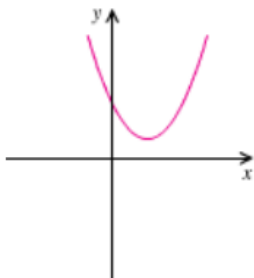
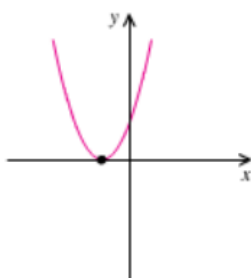


Recall: The solutions to  $ax^2 + bx + c = 0$  for  $a \neq 0$  are given by  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

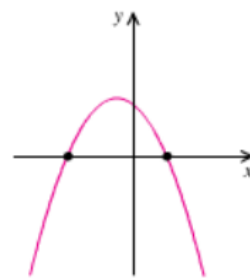
The Discriminant: \_\_\_\_\_



The discriminant \_\_\_\_\_



The discriminant \_\_\_\_\_



The discriminant \_\_\_\_\_

Example 1: Consider the following quadratic equations. How many and what type of solutions are there in each of these examples.

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

b.)  $4x^2 - 12x + 9 = 0$

c.)  $6x^2 + 5x - 4 = 0$

Example 2: Find quadratic equation(s) for which the given values are the solutions

a.) 4 and  $\frac{2}{3}$

b.) -5

c.)  $3\sqrt{2}$

d.)  $5 - 2i$  and  $5 + 2i$  (solve using two methods)

e.)  $\frac{5}{4} + \frac{\sqrt{33}}{4}$  and  $\frac{5}{4} - \frac{\sqrt{33}}{4}$  (solve using two methods)