

## QUADRATIC FORMULA

$$ax^2 + bx + c = 0$$

Use a, b, c and plug in to any 😊 quadratic equation to solve for the roots.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Example 1:

Solve:  $x^2 - 10x + 24 = 0$

$$a = 1, b = -10, c = 24$$

Ex 2: Solve:  $y^2 - 8y = 33$   
 $a = 1, b = -8, c =$

EX 3 Solve using quadratic formula:  
 $x^2 - 34x + 289 = 0$

EX 5 Solve using quadratic formula:  
 $4x^2 - 4x + 17 = 0$

Use the discriminant  $(b^2 - 4ac)$  to determine the nature of the roots of the equation.

If  $b^2 - 4ac > 0, \Rightarrow$  2 real roots

$b^2 - 4ac = 0 \Rightarrow$  1 real root

$b^2 - 4ac < 0 \Rightarrow$  2 complex roots

What?.....

Check the discriminant:

$$x^2 - 34x + 289 = 0$$

$$x^2 - 6x + 2 = 0$$

$$\cancel{4}x^2 - 4x + 17 = 0$$

