

# Bellwork:

graph:  $f(x) = -5(x-1)^2 + 5$

## Chapter 4.3: Solve $x^2+bx+c=0$ by Factoring

Monomial - single term polynomial ( $x^2$ ,  $a$ ,  $3$ )

Binomial - two term polynomial ( $x+4$ )

Trinomial - three term polynomial ( $x^2+3x+4$ )

ex. Factor:  $x^2 - 9x + 20$

$$x^2 + 3x - 12$$

Difference of Squares:

$$a^2 - b^2 = (a + b)(a - b)$$

$$a^2 - 4 = (a + 2)(a - 2)$$

Perfect Squares:

$$a^2 + 2ab + b^2 = (a + b)^2$$

$$a^2 - 2ab + b^2 = (a - b)^2$$

ex. Factor

$$x^2 - 49$$

$$d^2 + 12d + 36$$

$$z^2 - 26z + 169$$

- A quadratic equation in one variable can be written in the form  $ax^2+bx+c=0$
- The solutions to a quadratic equation are called roots.

REMEMBER: if  $ab=0$  then  $a=0$  or  $b=0$

ex. Find the roots.

$$x^2 - 5x - 36 = 0$$

ex. A town has a nature preserve with a rectangular field that measures 600 meters by 400 meters. The town wants to double the area of the field by adding land as shown. Find the new dimensions of the field.



ex. Find the zeros by writing in intercept form.

a.  $y = x^2 - x - 12$       b.  $y = x^2 + 12x + 36$

Homework: Ch 4.3 pg.255  
#'s 4-38e, 44-54e, 60,62