

## 3.2 notes

Tuesday, November 24, 2015

8:55 AM

Name: \_\_\_\_\_

Pre-Calculus 11

Date: \_\_\_\_\_

Mr. Johnson

### Lesson 3.2 – Solving Quadratic Equations by Factoring

We will use many of the skills we have developed for factoring expressions and use them to help us factor equations.

#### Quadratic Equation

A quadratic equation is any equation that can be written in the form  $ax^2 + bx + c = 0$ , where  $a, b, c$ , are constants and  $a \neq 0$ .

When an equation contains quadratic terms it cannot be solved by isolating the variable. The strategy we must use depends on the following

$$2x+1=7$$

Zero Product Property:

- If the product of two numbers is 0, then either number or both numbers equals 0.

- That is, if  $ab=0$ , then  $a=0$ , or  $b=0$ , or  $a=b=0$ .  
 $(x+a)(x+b) = 0$  both

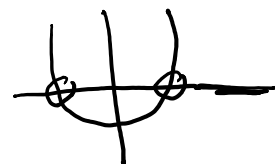
Example 1: Solve each equation, then verify the solution.

a.  $x^2 + x - 56 = 0$

where does it cross the x-axis?

$$(x-7)(x+8) = 0$$

zero property {  $x-7=0 \quad x=7$   
or  
 $x+8=0 \quad x=-8$



check

put 7, -8 into our original equation and should get 0

$$7^2 + 7 - 56 = 0$$

$$(-8)^2 - 8 - 56 = 0$$

$$49 + 7 - 56 = 0$$

$$64 - 8 - 56 = 0$$

$$56 - 56 = 0$$

$$56 - 56 = 0$$

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