

Honors Algebra II

Notes Section 1.3

Solve $x^2 + bx + c = 0$ by Factoring

VOCABULARY

Monomial: a #, a variable or a product of the two

Binomial: sum/difference of two terms

Trinomial: sum/difference of three terms

Difference of Two Squares: $a^2 - b^2 = (a - b)(a + b)$

Perfect Square Trinomial: $a^2 + 2ab + b^2 = (a + b)(a + b)$
 $a^2 - 2ab + b^2 = (a - b)(a - b)$

Quadratic Equation (Standard Form): $ax^2 + bx + c = 0$

Roots: solutions of a quadratic equation

Zeros: x-intercepts; p and q

EXAMPLE 1**Factor the expression, if possible.**

a) $x^2 - 9x + 20$

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

c) $x^2 - 3x - 18$

d) $x^2 - 3x + 9$

e) $x^2 + 2x - 63$

EXAMPLE 2**Factor the expression, if possible.**

a) $x^2 - 49$

b) $d^2 + 12d + 36$

c) $x^2 - 26x + 169$

d) $x^2 - 9$

e) $w^2 - 18w + 81$

EXAMPLE 3**Name the roots of each equation.**

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

b) $x^2 + 6x + 5 = 0$

EXAMPLE 4 A town has a nature preserve with a rectangular field that measures 600m x 400m. The town wants to double the area of the field by adding the same amount to each dimension. Find the new dimensions.



New Area = New Length x New Width

EXAMPLE 5

Find the zeros of the function by rewriting the function in intercept form.

a) $y = x^2 - x - 12$

b) $y = x^2 + 12x + 36$