

Notes #21 ~ Sect. 5.4: Factoring Quadratic Expressions

Factoring : rewriting an expression as the product of its factors.

GCF (Greatest Common Factor) : the common factor with the greatest coefficient and the greatest exponent

Ex. 1 : Factor each expression.

a) $15x^2 + 25x + 100$

b) $8m^2 + 4m$

Ex. 2: Factor each expression.

a) $x^2 + 10x + 24$

b) $x^2 - 14x + 33$

c) $x^2 + 3x - 28$

d) $x^2 - 6x - 16$

Ex. 3: Factor each expression.

a) $4x^2 + 7x + 3$

b) $2x^2 + 7x - 9$

Factoring Perfect Square Trinomials:

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

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

Ex. 4: Factor each expression.

a) $100x^2 + 180x + 81$

b) $64x^2 - 16x + 1$

Factoring a Difference of Two Squares:

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

Ex. 5: Factor each expression.

a) $x^2 - 64$

b) $4a^2 - 49$