

7-2 Factoring Polynomials

Objectives:

- I can factor a polynomial by GCF, grouping, and quadratic factoring.

Factor out the greatest common factor (GCF) of each polynomial.

$$6x^3 + 15x^2 + 6x$$

$$3x(2x^2 + 5x + 2)$$

$$2x^3 - \underline{20x}$$

$$2x(x^2 - 10)$$

$$14x^3y^2 + 21x^2y^2 - 7xy^2$$

$$7xy^2(2x^2 + 3x - 1)$$

Factor by Grouping.

$$4x^2 + 6x \mid -2x - 3$$

$$\underline{2x} \left(\underline{2x+3} \right) - \underline{1} \left(\underline{2x+3} \right)$$

$$(2x+3)(2x-1)$$

$$x^3 - 3x^2 \mid +x - 3$$

$$x^2 \left(\underline{x-3} \right) + \underline{1} \left(\underline{x-3} \right)$$

$$(x-3)(x^2+1)$$

$$x(x-21) + 5(x-21)$$

$$(x-21)(x+5)$$

$$9x^2 + 6x + 6x + 4$$

$$3x(3x+2) + 2(3x+2)$$

$$(3x+2)(3x+2)$$

Factor each quadratic expression.

$$x^2 + 6x + 8$$

$$(x+2)(x+4)$$

$$x^2 - 7x + 10 \quad (x-5)(x-2)$$

∴

$$x^2 - 5x + 6$$

$$(x - 3)(x - 2)$$

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

$$(x - 5)(x - 4)$$

$$x^2 - 5x + 4$$

$$(x - 1)(x - 4)$$

$$x^2 - 3x - 10$$

$$(x - 5)(x + 2)$$

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