2.3 Factoring Polynomials

Feb 24

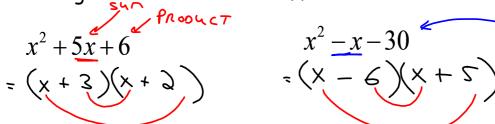
-the reverse of expanding

Common Factoring

$$7x^2 - 14x = 7 \times (x - 2)$$

F 016

Factoring trinomial without coefficient $-x^2 + b \times + C$



$$x^{2}-x-30$$
 $(x-6)(x+5)$
 $(x-6)(x+5)$
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Factoring Difference of Squares

$$x^{2}-25$$

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

$$9x^{2} - 121$$
= $(3x + 11)(3x - 11)$

Factoring Perfect Squares

$$x^{2} + 8x + 16$$

$$9x^2 - 30x + 25$$

$$= \left(3x - 5\right)^3$$

Factoring trinomials $ax^2 + bx + c$

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

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

$$12x^2 + 13x - 4$$

$$(3x + 4)(4x - 1)$$

$$12x^{3} + 38x^{2} + 30x$$

$$= 2 \times (6 \times^{2} + 19 \times + 17)$$

$$= 2 \times (2 \times + 3)(3 \times + 5)$$

Factoring by Grouping

$$x^{3} + 3x^{2} + 2x + 6$$

$$x^{3}(x+3) + 2(x+3)$$

$$= (x+3)(x^{2}+2)$$

$$= (x+3)(x^{2}+2)$$

$$= (x+3)(x^{2}+2)$$

$$= (x-3)(2x^{2}-1)$$

Factoring by Grouping as a Difference of Squares

$$x^{2}-6x+9-4y^{2} = (x-3)^{2}-(y^{2})^{2}$$

$$= (x-3)^{2}-(y^{2})^{2}$$

$$= (x-3+2y)(x-3-2y) = 9x^{2}-(y^{2}+9y+9)$$

$$= (3x+y+2)(3x-(y+2))$$

$$= (3x+y+2)(3x-y-2)$$

Homework p.102 #1-7,9