10.2 – Factoring I

I. COMMON FACTORS: Always look for common factors first. If the leading coefficient is negative, factor negative one out of every term.

Examples:

1. $3x^2 + 6x$

$3x(x+2)$

2. $25y^3 - 30y^2$

$5y^2(5y-6)$

3. $-4x^2 - 8x - 6x^3$

$-2x(2x+4+3x^2)$

4. $-6x^2 + 15x$

$-3x(2x-5)$

II. DIFFERENCE OF SQUARES: $a^2 - b^2 = (a + b)(a - b)$

5. $x^2 - 9$

$(x+3)(x-3)$

6. $4x^2 - y^2$

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

7. $25x^2 - 49y^2$

$(5x+7y)(5x-7y)$

8. $125x^2 - 80$

$5(25x^2-16)$

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

9. $x^2 + 9$

Does not factor!