Math 095 – Factoring Review

STEP 1: Look for GCF!

1. $x^2 + x^5$

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

$x \cdot x$ $\quad$ $x \cdot x \cdot x$

2. $5x - 10$

$5(x - 2)$

3. $10x - 30y$

$10(x - 3y)$

4. $21m^2n - 14mn^2$

$7mn(3m - 2n)$

STEP 2-A: Is it a trinomial? Must be in what form? $ax^2 + bx + c$

1. $x^2 + 9x + 20$

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

$4x$

$5x$

2. $16 - 10x + x^2$

$x^2 - 10x + 16$ $\quad$ $2 \cdot 8$, $4 + 4$

$(x - 2)(x - 8)$

$-2x$

$-8x$

3. $5x^2 + 50x + 45$

$= 5(x^2 + 10x + 9)$ (1, 9; 3, 3)

$= 5(x + 1)(x + 9)$ ($1x$, $9x$)

4. $2x^2 + 17x + 21$

(1, 2; 1, 21; 3, 7)

$= (x + 7)(2x + 3)$ ($+14x$, $+3x$)

5. $16x^2 - 4x - 30$

$= 2(8x^2 - 2x - 15)$ (1, 8; 2, 4; 1, 15; 3, 5)

$= 2(2x - 3)(4x + 5)$ ($-12x$, $+10x$)

6. $4x^3 + 12x^2 + 9x$

$= x(4x^2 + 12x + 9)$ (F, OI, L)

(1, 4; 2, 2; 1, 9; 3, 3)

$= x(2x + 3)(2x + 3)$ ($+6x$, $+6x$)

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

STEP 2-B: Is it a binomial? Is it the <u>difference</u> of squares?

F L

1. $x^2 - 9$

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

$+3x$
$-3x$

2. $25x^2 - 16$

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

3. $81m^2 - 100n^2$

$= (9m + 10n)(9m - 10n)$

4. $7x^2 - 7y^2$

$= 7(x^2 - y^2)$

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