ALG III

10/31/17

Factoring Day #1
Greatest Common Factor

Do Now: Divide

$$\frac{7k+28}{7} = \frac{7(k+4)}{7} = k+4$$

$$\frac{32m+24}{2}$$

$$\frac{2(16m+12)}{2}$$

$$16m+12$$

$$\frac{100x^5 - 50x^4 + 25x^3}{5x^2} = \frac{5x^2(20x^3 - 10x^2 + 5x)}{5x^2}$$

$$20x^3 - 10x^2 + 5x$$

EX #1: Factor out the greatest common factor.

$5z+5$

$5(z+1)$

$8a-9$

$8a-9$

$3t^2+6t^3$

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

$12x^2-8x+2$

$2(6x^2-4x+1)$

EX #2: Factor out the greatest common factor.

$4x^2y+6xy^2+8x^2y^2$

$2xy(2x+3y+4xy)$

$5x^4y^3+15x^5y^6-20x^4y^6$

$5x^2y^2(1x^2y^1+3x^3y^4-4x^3y^4)$

$5x^4y^3(1+3xy^3-4y^3)$

$-18x^2+27x+9$

$9(-2x^2+3x+1)$

EX #3: Factor out the greatest common factor.

$(a+2)(a-3)+(a+2)(a+6)$

$(a+2)((a-3)+(a+6))$

$(a+2)(2a+3)$

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

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

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

$(y-1)(-1)$

$k^2(a+5b)+m^2(a+5b)$

$(a+5b)(k^2+m^2)$

EX #4: Factor by Grouping

$(6p-6x)+(rp-rx)$

$6(p-x)+r(p-x)$

$(p-x)(6+r)$

$6ax+12bx+a+2b$

$6x(a+2b)+1(a+2b)$

$(a+2b)(6x+1)$

EX #5: Factor by grouping.

$kn+mn-k-n$

$kn-k+mn-n$

$k(n-1)+n(m-1)$

$kn+mn-k-m$

$kn-k+mn-m$

$k(n-1)+m(n-1)$

$(k+m)(n-1)$

$xy-2y-4x+8$

$10x^2y^2-18+15y^2-12x^2$

$10x^2y^2+15y^2-18-12x^2$

$5y^2(2x^2+3)-6(3+2x^2)$

$(5y^2-6)(2x^2+3)$

Assignment:

pg. 290 #7-12, 17-25 odd, 40, 43, 47, 45, 51