5-4 Day 3

Grouping

EX 1. $a^3 - 4a^2 + 3a - 12$

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

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

EX 2. $x^3 + 5x^2 - 2x - 10$

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

$(x+5)(x^2-2)$ ✗

or

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

Simplifying Quotients

EX 3. $\dfrac{x^2 + 2x - 3}{x^2 + 7x + 12} = \dfrac{(x+3)(x-1)}{(x+3)(x+4)} = \dfrac{x-1}{x+4}$

EX 4. $\dfrac{a^2 - a - 6}{a^2 + 7a + 10} = \dfrac{(a-3)(a+2)}{(a+2)(a+5)} = \dfrac{a-3}{a+5}$

EX 5. $64x^6 - y^6 = (2x)^3 + y^3 \quad (2x)^3 - y^3$

$= (8x^3 + y^3)(8x^3 - y^3)$

$= (2x+y)(4x^2 - 2xy + y^2)(2x-y)(4x^2 + 2xy + y^2)$

$x^3 \cdot x^3 = x^6$

---

1. $c(x+2) + d(x+2)$

$(x+2)(c+d)$

7. $5m + mn + 20 + 4n$

$m(5+n) + 4(5+n)$

$(5+n)(m+4)$