April 4, 2016

Chapter 6 → Factoring

$a(b+c) = ab + bc$

$a(b+c)$: Chp 5 — $ab + bc$: Chp 6 — multiplication

Factoring

Apr 4-9:56 AM

$-8x^3 + 4x^2 - 2x$

GCF = $2x$

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

R.P. ? yes

$\frac{-8x^3}{2x} = -4x^2$

$-8x^3 + 4x^2 - 2x$ ✓

Apr 4-10:04 AM

$12x^4 - 6x$

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

Not R.P. → GCF = 2

$3x \cdot 2(2x^3 - 1)$

$6x(2x^3 - 1)$ Fully Factored

Apr 4-10:09 AM

$ab + ac$

GCF = a

$b(a) + c(a)$

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

GCF = $2-y$

$(2-y)(x+5)$ fully factored

R.P.

Apr 4-10:12 AM

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

GCF = $(x-2)$

$(x-2)(x-1)$

Apr 4-10:15 AM

Factoring by Grouping

Group 1: $x^2 - 4x$ — GCF = x

Group 2: $+5x - 20$ — GCF = 5

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

R.P. R.P.

GCF = $(x-4)$

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

R.P. R.P.

Apr 4-10:27 AM

$x^2 - 9x + 3x - 27$

$x(x-9) + 3(x-9)$

$(x-9)(x+3)$ F O I L

F O I L: first, outer, inner, last

F: $x \cdot x = x^2$

O: $x \cdot 3 = 3x$

I: $(-9) \cdot x = -9x$ } collect like terms

L: $(-9) \cdot 3 = -27$

$x^2 + 3x - 9x - 27$

$\boxed{x^2 - 6x - 27}$

Apr 4-10:35 AM

6.2

Zero Product Property

$a \cdot b = 0$

a, b: factors; 0: product

① $a = 0$

② $b = 0$

③ a & $b = 0$

Apr 4-10:42 AM

$(x-2)(x+5) = 0$ ($a \cdot b = 0$)

① $x - 2 = 0$ solve

$\boxed{x = 2}$

Ck

$(2-2)(2+5) = 0$

$0 \cdot 7 = 0$

$0 = 0$ ✓

② $x + 5 = 0$ solve

$\boxed{x = -5}$

Ck

$(-5-2)(-5+5) = 0$

$(-7) \cdot 0 = 0$

$0 = 0$ ✓

Apr 4-10:46 AM