

April 4, 2016
 Chapter 6 → **Factoring**

Distributing Tool

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

multiplication

Factoring

Apr 4-9:07 AM

* **Greatest Common Denominator Factor**

26 & 84

26 = 2 · 13

84 = 2 · 42 = 2 · 2 · 21 = 2 · 2 · 3 · 7

26 = 2 · 13

84 = 2 · 2 · 3 · 7

R.P.

GCF = 2

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21 & 22

21 = 3 · 7

22 = 2 · 11

→ Relatively Prime

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x^3 x^5 x^6

GCF = x^3

$\frac{x^3}{x^3}$	$\frac{x^5}{x^3}$	$\frac{x^6}{x^3}$
1	x^2	x^3

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$14x^8$ & $24x^4$

GCF = $2x^4$

$14x^8 - 24x^4$ Factor out GCF

$2x^4(7x^4 - 12)$ R.P.

$\frac{14x^8}{2x^4} = 7x^4$

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$12x^2 - 6x$

$3x(4x - 2)$

not the GCF

R.P. ? no!

Another GCF = 2

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

$6x(2x - 1)$ R.P.

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

Factor out GCF = $2x$

$$2x \underbrace{(-4x^2 + 2x - 1)}_{R.P.}$$

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$$\frac{6x + 3}{3}$$

$$\frac{3(2x + 1)}{3} = 2x + 1$$

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$$\boxed{a}b + \boxed{a}c = a(b + c)$$

$$b\boxed{a} + c\boxed{a} = a(b + c)$$

$$\begin{matrix} \uparrow & & \uparrow \\ x(2-y) + 5(2-y) \\ \text{GCF} = 2-y \end{matrix}$$

$$(2-y) \underbrace{(x+5)}_{R.P.} \text{ now factored!}$$

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

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

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Factoring by Grouping

Group 1	Group 2
$x^2 - 5x$	$+4x - 20$
GCF = x	GCF = 4

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

$$\underbrace{\hspace{10em}}_{\text{GCF} = x-5}$$

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

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