

March 28, 2016  
Exam #2 - Wednesday  
2.5, 3.1, 5.1, 5.2, 5.4, 5.5, 5.6

5.5  
#30)  $(2^{2m-9})^3 = 2^{(2m-9)(3)} = 2^{6m-27}$

$(a^m)^n = a^{m \cdot n}$

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5.6  
#48)

$(3a^2 - 9a + 4)(3a^2 - 9a + 2)$

$9a^4 - 27a^3 + 6a^2 - 27a^3 + 81a^2 - 18a$

$12a^2 - 36a + 8$

$9a^4 - 54a^3 + 99a^2 - 54a + 8$

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5.5  
#48)

$(9b^{6n})^3$

$(9b^{6n}) \cdot (9b^{6n}) \cdot (9b^{6n})$

$9 \cdot 9 \cdot 9 \cdot b^{6n} \cdot b^{6n} \cdot b^{6n}$

$729 b^{6n+6n+6n}$

$729 b^{18n}$

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Chapter 6 Factoring

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

Chapter 5

Chapter 6

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6.1 Greatest Common Factor

$\text{GCF}$

18      54

$2 \cdot 3 \cdot 3$        $2 \cdot 3 \cdot 3 \cdot 3$

$18 = 2 \cdot 3 \cdot 3$   
 $54 = 2 \cdot 3 \cdot 3 \cdot 3$   
 $\text{GCF} = 2 \cdot 3 \cdot 3 = 18$

15      18

$3 \cdot 5$        $2 \cdot 3 \cdot 3$

$15 = 3 \cdot 5$   
 $18 = 2 \cdot 3 \cdot 3$   
 $\text{GCF} = 3$

if  $15 \div 3 = 5$   
if  $18 \div 3 = 6$

what is the GCF of 5 & 6.  
ans. = 1

what is Common?  
↓  
Relatively Prime (R.P.)

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GCF and Variables

$x^3, x^4, x^7$

$x^3 = x \cdot x \cdot x$   
 $x^4 = x \cdot x \cdot x \cdot x$   
 $x^7 = x \cdot x \cdot x \cdot x \cdot x \cdot x \cdot x$

$x \cdot x \cdot x \rightarrow x^3$

$\text{GCF} = x^3$

$\frac{x^3}{x^3} = x^{3-3} = x^0 = 1$   
 $\frac{x^4}{x^3} = x^{4-3} = x^1 = x$   
 $\frac{x^7}{x^3} = x^{7-3} = x^4$

Common "1"  
↓  
R.P.

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Factor out a GCF

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

$\swarrow$   
 GCF = a  
 $a(\overbrace{b+c}^{R.P.})$

$$(3x+18) = 3(\overbrace{x+6}^{R.P.})$$

$\swarrow$   
 GCF = 3

$$\frac{3x}{3} = x$$

$$\frac{18}{3} = 6$$

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$$(6y-12) = \boxed{2}(\overbrace{3y-6}^{Not\ R.P.})$$

$$6(\overbrace{y-2}^{R.P.})$$

$\downarrow$   
 not the GCF!

$$= 2 \cdot 3(y-2)$$

$$= 6(y-2)$$

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①

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

$$2(-\overbrace{2x^3 - x^2 + 4x + 1}^{R.P.})$$

2

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

$$2x(-\overbrace{2x^2 - x + 4}^{R.P.})$$

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