

Chapter 4 - Algebra Review

Example 1Simplify the following (remember $x * x = x^2$, etc)

1. $5(x + 3)$

$$5x + 15$$

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

$$3xy^2 - 12xy + 15x$$

10. $3y(4y - 9)$

$$12y^2 - 27y$$

13. $v(2v - 1) + 3(5 - v)$

$$2v^2 - v + 15 - 3v$$
$$2v^2 - 4v + 15$$

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Example 2

Simplify the following using double distribution (A.K.A. F-O-I-L = First-Outside-Inside-Last)

16. $(x+2)(x-6)$

$x(x+2) - 6(x+2)$

$x^2 + 2x - 6x - 12$

$x^2 - 4x - 12$

19. $(3x-1)(4x-3)$

$12x^2 - 9x - 4x + 3$

$12x^2 - 13x + 3$

Chapter 4 - Factoring Day 1 Wks

Example 1

Factor using the Greatest Common Factor (GCF)

5. $3x^2 + 5x$

$$x(3x + 5)$$

$$\begin{array}{l} x(3x + 5) \\ 3x^2 + 5x \end{array}$$

7. $18x^2 + 27y^2$

$$9(2x^2 + 3y^2)$$

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Example 1

Factor using the Greatest Common Factor (GCF)

9. $3n^3 - 18n^2 + 15n$

$$3n(n^2 - 6n + 5)$$

11. $4k^5 + 10k^4 - 8k^3$

$$2k^3(2k^2 + 5k - 4)$$

Chapter 4 - Factoring Day 1 Wks

Example 2

Factor completely

20. $x^2 + 12x + 11$

$11 + 1 = 12$

$(x+11)(x+1)$

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Example 2

Factor completely

23. $x^2 - 9x + 18$

$$\begin{array}{l} \uparrow \\ 9 + 2 = 11 \\ \textcircled{-6 + -3} = -9 \\ \downarrow \\ +18 = 18 \end{array}$$
$$(x-6)(x-3)$$

24. $x^2 + 3x - 10$

$$\begin{array}{l} \uparrow \\ -10 + 1 = -9 \\ -1 + 10 = 9 \\ -5 + 2 = -3 \\ \textcircled{-2 + 5} = 3 \end{array}$$
$$(x-2)(x+5)$$

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Example 2

Factor completely

27. $x^2 - 4x - 21$

$$\begin{array}{r} \triangle \\ \textcircled{-7 + 3} = -4 \\ \begin{array}{cc} -3 & 7 \end{array} \end{array}$$

$$(x-7)(x+3)$$

29. $x^2 + 0x - 81$

$$\begin{array}{r} \triangle \\ \textcircled{-9 \quad 9} \\ \begin{array}{cc} -3 & 27 \\ -27 & 3 \\ -81 & 1 \\ -1 & 81 \end{array} \end{array}$$

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