

Algebra 1

Lesson 9.5

Factor $x^2 + bx + c$

Warm-Up

Factor each polynomial by finding the GCF

(a) $4y^3 - 8y$

(b) $25ab^3 + 5ab$

(c) $3x^2y - 12xy^3 + 6x^2y^2$

(d) $14xy^3 - 21xy^2 + 28x$

Example 1. Working Backward (Factoring) with Tables

$$x^2 + 7x + 10$$

	x	
x	x^2	
		10

(a) $x^2 + 3x - 28$

	x	
x		
		-28

(b) $x^2 - 4x - 32$

	x	
x		
		-32

(c) $x^2 - 13x + 40$

	x	
x		
		40

	x	
x		
		-28

	x	
x		
		-32

	x	
x		
		40

Example 2. Looking at Patterns

$$x^2 - 6x + 8$$

Factors of 8	Sum of Factors

(a) $x^2 - 4x - 5$

(b) $x^2 + 2x - 15$

(c) $x^2 - 11x + 30$

(d) $x^2 + 8x + 12$

Factors	Sum of Factors

Factors	Sum of Factors

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Factors	Sum of Factors

Example 3. Solving by Factoring

Solve the equation.

(a) $x^2 - 2x - 8 = 0$

(b) $x^2 - x = 12$

(c) $x^2 + 1 = -2x$

(d) $x^2 + 6x + 10 = 2$

Assignment

New: Pg. 586 #4 - 28 (evens)

Review:

Factor.

1. $4x^3 - 16x^2$

2. $3(x - 2) + (x - 2)(x + 1)$

3. $12x^4 - 15x^3 - 18x^5$

Solve.

4. $2x(x - 4) = 0$

5. $5x^2 - 25x = 0$

6. $3x^2 = 4x$