



Objective: Factoring Quadratics of the form $x^2 + bx + c$

Homework FE-3 – NYA p.521 #1 – 29 (odd)

Do Now: Find the GCF 1. $14x^2 + 6x + 12$ 2. $15x^7 - 35x^5$ 3. $18x^5 + 13x^3 - x^3$

Exam Prep: Which two numbers multiply to 18 and add to -11 ?

- A) 6, 3 B) 9, -2 C) 7, -18 D) $-9, -2$



This looks like it's complicated, but it is not!

You will undo FOIL with this simple process.

Quadratic Equations have a general form of $ax^2 + bx + c = 0$.
The coefficients “a”, “b”, and “c” are going to be heavily discussed.

*** This Lesson: a = 1! ***

Factoring Quadratics (with a = 1)

Original: $x^2 + 4x - 12$	<p>When factoring, to find the numbers in the parentheses you need find two numbers that:</p> <p>Multiply to “c” and Add to “b”</p> <p>Check by FOIL or Box Method</p>
$-2 \bullet 6 = -12$	
$-2 + 6 = 4$	
Factored: $(x - 2)(x + 6)$ **order does not matter**	

What is factor is missing?

1. $x^2 + 15x + 50 = (x + 5)(x \quad)$

2. $y^2 + 7y - 30 = (y + 10)(y \quad)$

Investigate – What do you see about “b” and “c” after factoring these?

1. $x^2 + 11x + 30$	2. $y^2 - 6y + 8$
3. $k^2 + 6k - 27$	4. $x^2 + x - 20$

Practice – Fill in the missing factor

1. $y^2 - 13y + 36 = (y - 4)(y \quad)$	2. $v^2 - 2v - 24 = (v + 4)(v \quad)$
3. $x^2 + 9x + 18 = (x + 1)(x \quad)$	4. $q^2 + 3q - 18 = (q - 3)(q \quad)$

Mixed Practice

1. $n^2 - 3n + 2$	2. $q^2 - 2q - 8$	3. $y^2 + 6y + 8$
4. $h^2 + 16h - 17$	5. $x^2 + 19x + 18$	6. $d^2 - dx + 20$
7. $w^2 + 6w + 5$	8. $p^2 + 3p - 54$	9. $x^2 + 21x + 38$

Extra Practice

1. $x^2 + 11x + 30$

5. $t^2 + 4t + 4$

2. $y^2 - 8y + 16$

6. $x^2 + 7x - 18$

3. $r^2 - 3r - 40$

7. $w^2 - w - 56$

4. $k^2 + k - 42$

8. $d^2 - 4x + 30$