



Objective: Factoring Completely

Homework FE-5 – NYA p.539 #54, 56, 57, 59, 60, 61

Do Now: Factor 1. $x^2 - 81$ 2. $16y^2 - 100$

Exam Prep: Which of the following is not equal to a difference of squares?

- A) $x^2 + 36$ B) $(x + 2)(x - 2)$ C) $a^2 - b^2$ D) $4k^4 - 49$



Time to throw it all together! Put on your helmet.

Factoring Completely

Factoring completely really just means you have to make sure you have done as much factoring as possible to simplify an expression.

We You Know

1. **GCF Factoring:** $5x^3 + 30x^2 = 5x^2(x + 6)$
2. **Difference of Squares:** $4x^2 - 25 = (2x + 5)(2x - 5)$
3. **Regular Quadratic: Product of "c" & Sum of "b"** $x^2 + 2x - 15 = (x + 3)(x - 5)$

***Search for a GCF to factor first and then look further.**

Example:	$3x^3 + 18x^2 + 24x$	Original
	$3x(x^2 + 6x + 8)$	GCF Factored Out
	$3x(x + 4)(x + 2)$	Regular Quadratic (complete)

Practice

1. $5x^3 + 9x$

5. $10wx^2 + 90wx - 200w$

2. $7x^3 - 35x^2 - 42x$

6. $3xy^2 - 75x$

3. $5y^6 + 5x^5 - 25x^4$

7. $z^3 - 14z^2 + 13z$

4. $8x^4 - 72x^2$

8. $7 - 7x^2$