

8.2/8.4 Multiplying and Factoring

Recall the DISTRIBUTIVE PROPERTY

$$3(x + 5) = 3x + 15$$

So, let's practice some:

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

$$8 - 12x + 20x^2$$

$$20x^2 - 12x + 8$$

$$3(x^2 + 5x - 2)$$

$$3x^2 + 15x - 6$$

Nov 11-12:39 PM

Recall MULTIPLYING VARIABLES WITH EXPONENTS

Remember when we are multiplying variables with the same base we can ADD THE EXPONENTS together

$$x^4(x^6) = x^{10} \quad 3x^3(-6x^2) = -18x^5$$

Let's try some:

$$x^7(x^3)$$

$$= x^{10}$$

$$-4x^3(x^8) = -4x^{11}$$

Apr 15-6:49 AM

We can take these two concepts and merge them together to simplify the following:

$x^2(x - 3)$	$4x^3(x + 5)$	$-2x^4(3x - 4)$
$x^3 - 3x^2$	$4x^4 + 20x^3$	$-6x^5 + 8x^4$

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$2x^3(4x^2 - 3x + 2)$	$9x^8(7x^6 + 5x^4 - 3x^2 + 1)$
$8x^5 - 6x^4 + 4x^3$	$63x^{14} + 45x^{12} - 27x^{10} + 9x^8$

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Now try this.

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

$$x^3 + x^2 - 2x^3 + x$$

$$-x^3 + x^2 + x$$

Apr 20-10:46 AM

**Classwork: p.507 #3 - 8 all
p.508 #36**

Part 2 notes in 15 minutes.

Apr 17-10:43 AM

Essential Understanding Factoring a polynomial reverses the multiplication process. When factoring a monomial from a polynomial, the first step is to find the greatest common factor (GCF) of the polynomial's terms.

What is the GCF of $\frac{5x^3}{5x} + \frac{25x^2}{5x} + \frac{45x}{5x}$?

$$5x$$

Now factor $5x^3 + 25x^2 + 45x$

$$5x(x^2 + 5x + 9)$$

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Factor each polynomial.

$$\frac{9x}{3} - \frac{6}{3}$$

$$3(3x - 2)$$

$$\frac{14n^3}{7} - \frac{35n^2}{7} + \frac{28}{7}$$

$$7(2n^3 - 5n^2 + 4)$$

Nov 11-1:15 PM

Factor each polynomial.

$$\frac{4x^5}{4x} - \frac{24x^3}{4x} + \frac{8x}{4x}$$

$$4x(x^4 - 6x^2 + 2)$$

$$\frac{6x^4}{2x^2} - \frac{12x^3}{2x^2} + \frac{4x^2}{2x^2}$$

$$2x^2(3x^2 - 6x + 2)$$

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😊 Factor 😊

$$\frac{14m^2n}{7mn} + \frac{35mn^2}{7xn}$$

$$7mn(2m + 5n)$$

$$\frac{-3r^3s^3}{-3r^2s^3} + \frac{18r^2s^5}{-3r^2s^3}$$

$$-3r^2s^3(1r - 6s^2)$$

Nov 27-10:23 AM

Classwork: p.520 #17 - 24 all
p.521 #40 - 45 all

Put with p.507

Turn in.

Nov 27-10:23 AM