Multiplying and Dividing Polynomials

In This Unit:

1. Distribution Property (mutliplying)
2. F.O.I.L. (multiplying)
3. Separation (dividing)

Bellwork
03/12/12

Subtract the polynomials.

1. $(3x^3-5x^2-7)-(2x^2+3x-8)$

$3x^3-5x^2-7+-2x^2-3x+8$

$3x^3-7x^2-3x+1$

Lesson 11.1
Distribution Property

What You Need to Know:

Now that you're multiplying same bases, exponents MAY change!

Use the distributive property just like you would with simple numbers.

Answers still need to be in standard form!

Distributive Property

Find the product. Write the answer in standard form.

$2(3x+1)$

$6x+2$

$(2x)(5x-1)$

$2x^1(5x^1-1)$

$10x^2-2x$

$(3m^2)(8m^2-4m+1)$

$3m^2(8m^2-4m^1+1)$

$24m^4-12m^3+3m^2$

$(-5t)(t^2+2t-4)$

$-5t^1(t^2+2t^1-4)$

$-5t^3-10t^2+20t^1$

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

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

x^3+1x^2-5x-2

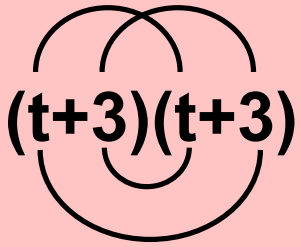
Lesson 11.2
F.O.I.L

What You Need to Know:

FOIL is a shortcut used to multiply two binomials.

Example: (x+3)(x+3)

First Outer Inner Last



Once you follow FOIL, combine like terms, and be sure to write the answer in standard form.

F.O.I.L.

Find the product using FOIL. Write the answer in standard form.

$(n+5)(n+1)$

$n^2+1n+5n+5$

n^2+6n+5

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

$2x^2-8x+5x-20$

$2x^2-3x-20$

$(4a+5)(2a-3)$

$8a^2-12a+10a-15$

$8a^2-2a-15$

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

$20n^2-10n+12n-6$

$20n^2+2n-6$

$(4t+3)^2$

$(4t+3)(4t+3)$

$16t^2+12t+12t+9$

$16t^2+24t+9$

Homework Assignment

Worksheet
"Multiplying Polynomials"

Lesson 10.3
Separation Property

What You Need to Know:

When dividing two polynomials, use the separation property.

Example:

$$\frac{21x^4+49x^3-7x^2}{-7x^2}$$

$$\frac{21x^4}{-7x^2}+\frac{49x^3}{-7x^2}+\frac{-7x^2}{-7x^2}$$

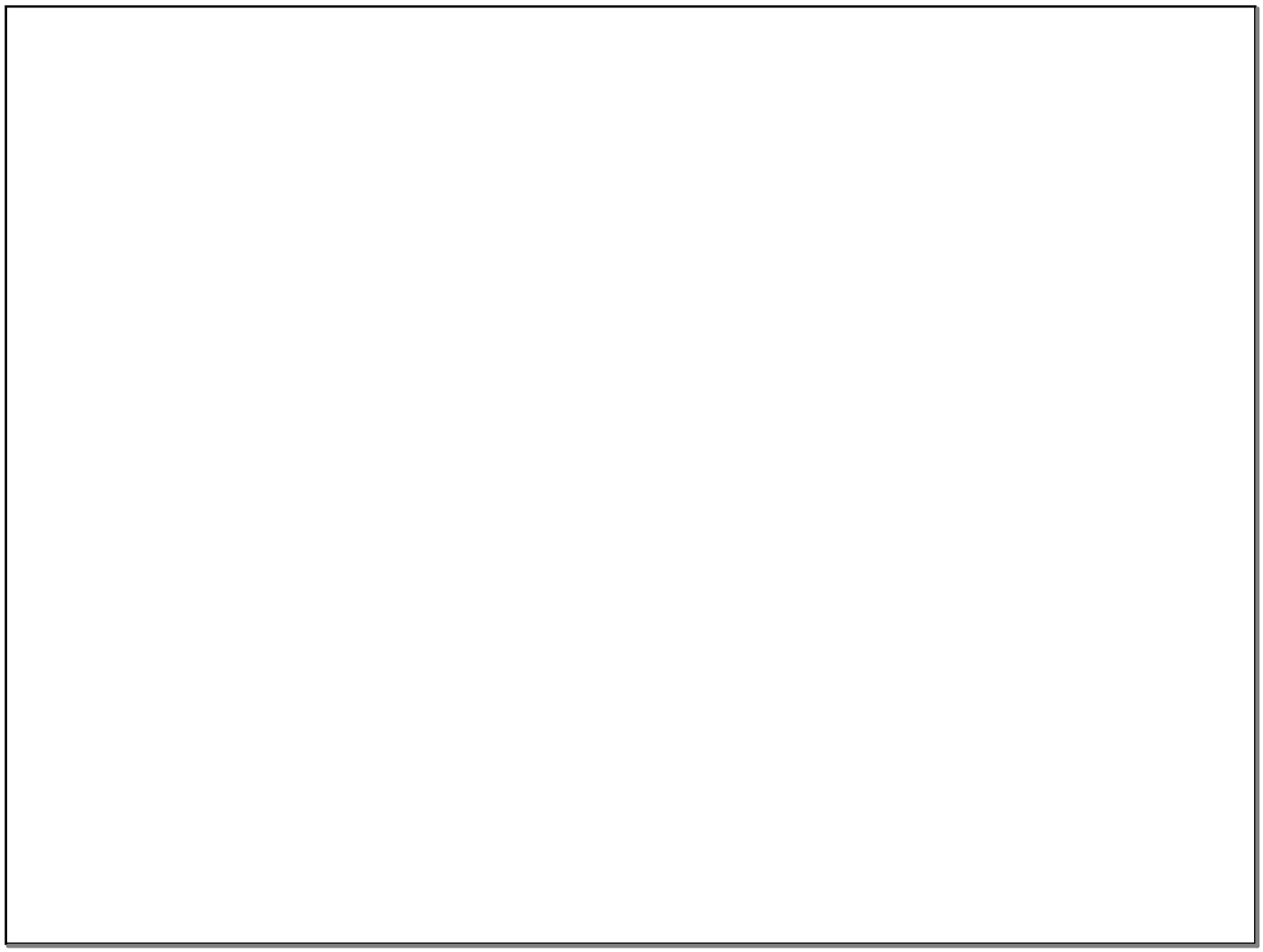
Separation Property

Find the quotient. Make sure the answer is in standard form.

$$\frac{9x^2-15x+6}{-3}$$

$$\frac{35x^3+5x^2-25x}{5x}$$

$$\frac{2x^4+8x^3-6x^2}{-2x^2}$$

Homework Assignment

Worksheet
"Dividing Polynomials"