

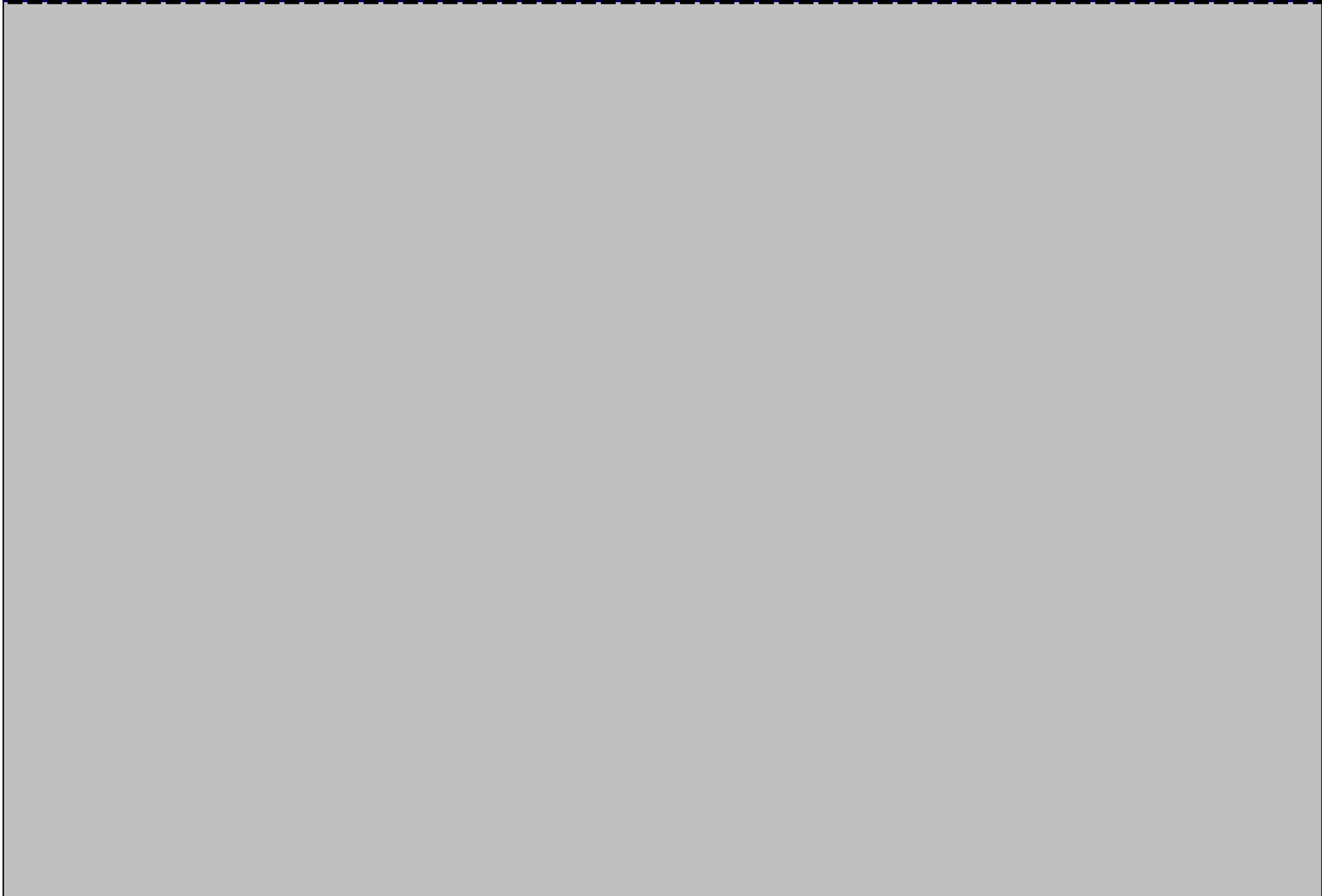
Intro to Polynomials

In This Unit:

1. Simplifying Polynomials
2. Adding Polynomials
2. Subtracting Polynomials

No Bellwork

03/08/2012



Lesson 10.1

Simplifying Polynomials

What You Need to Know:

A polynomial is an expression which is the sum of terms of the form ax^k where k is a *positive* integer.

Example: $\frac{3x^2}{2} + \frac{2x^1}{1} + \frac{1}{0}$

The degree of each term (part separated by a + or - sign) is the sum of the exponents of the term.

Standard Form is when the terms are placed in decreasing order, from largest degree to smallest degree.

Example: $\frac{2x^1}{1} + \frac{1}{0} + \frac{3x^2}{2}$ becomes $\frac{3x^2}{2} + \frac{2x^1}{1} + \frac{1}{0}$

$\frac{3x}{1}$
 $\frac{6x^2}{2}$

Simplifying a polynomial is simply combining like terms. The terms must have the exact same variable parts (coefficients can be different).

Simplifying Polynomials

Simplify the polynomial. Write the answer in standard form.

~~10d - 3 + d~~ 10d + 1d

11d - 3

1 0

~~17s - 8 + 2s~~ 17s - 12s

5s - 8

1 0

$6x^2 + 3x - 1$

2 1 0

7 - 3(2 + z)

~~7 - 6 - 3z~~

1 - 3z → -3z + 1

0 1

$x^2 - 2x(x + 7)$

2 1 0

-2x · x -2x · 7

~~x² - 2x² - 14x~~

-x² - 14x

2 1

-(6y - 5) + 6y

-1(6y - 5) + 6y

~~6y - 5 + 6y~~

5

$15d^2 + 4d(2 - d)$ 4d · 2 4d · -1d

~~15d² + 8d - 4d²~~

11d² + 8d

2 1

Lesson 10.2

Adding Polynomials

What You Need to Know:

When adding polynomials, combine like terms.

When you add polynomials, the exponents should never change-only the coefficients in the front!

Standard Form is when the terms are placed in descending order, from largest degree to smallest degree.

Adding Polynomials

Find the sum. Make sure the final answer is in standard form.

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

$$\begin{array}{r} \underbrace{7+2x-4x^2} + \underbrace{-3x+x^2-5} \\ \hline -3x^2 - 1x + 2 \end{array}$$

$$(6x-x^2+3)+(4x^2-x-2)$$

$$\begin{array}{r} \underbrace{6x-x^2+3} + \underbrace{4x^2-x-2} \\ \hline 3x^2 + 5x + 1 \end{array}$$

$$(x^2-x-4)+(2x+3x^2+1)$$

$$\begin{array}{r} \underbrace{x^2-x-4} + \underbrace{2x+3x^2+1} \\ \hline 4x^2 + 1x - 3 \end{array}$$

$$\begin{array}{r} -9+8+4 \quad 1+-2 \quad -8+-3 \quad 2+4+-1 \end{array}$$

$$(-8x^3+x-9x^2+2)+(8x^2-2x+4)+(4x^2-1-3x^3)$$

$$\begin{array}{r} \underbrace{-8x^3} + \underbrace{x} - \underbrace{9x^2} + \underbrace{2} + \underbrace{8x^2} - \underbrace{2x} + \underbrace{4} + \underbrace{4x^2} - \underbrace{1} - \underbrace{3x^3} \\ \hline -11x^3 + 3x^2 - 1x + 5 \end{array}$$

Lesson 10.3

Subtracting Polynomials

What You Need to Know:

To subtract polynomials, change the subtraction sign to addition. Then change the signs of every term in the polynomial that came after the subtraction sign.

Example:

Becomes

$$(5x^2 - 4x + 1) - (8 - x^2)$$
$$(5x^2 - 4x + 1) + (-8 + x^2)$$

Subtracting Polynomials

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

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

$$(2x+3-5x^2)-(2x^2-x+6)$$

$$(12x-8x^2+6)-(-8x^2-3x+4)$$

$$(-6x^3+5x-3)-(2x^3+4x^2-3x+1)$$

Homework Assignment

Worksheet "Intro to Polynomials"