Lesson Title 5.2 Adding & Subtracting Polynomial Functions DAY TWO NOTES   B2A2   Date _____

OBJECTIVE 3: Simplifying Polynomials by Combining Like Terms

Like Terms	Unlike Terms
$5x^2$, $-7x^2$	$3x$, $3y$
y, $2y$	$-2x^2$, $-5x$
$\frac{1}{2}a^2b$, $-a^2b$	$6st^2$, $4s^2t$

Only like terms can be combined. The variables have to be the same and raised to the exact same power.

Remember to write in alphabetical order. It helps you know which terms are like terms:

$7yx = 7xy$

TASK 2: Combine like terms (CLT) to simplify.

a) $-9x^2 + 3xy - 5y^2 + 7yx$

$-9x^2 + 10xy - 5y^2$

b) $\frac{2}{5}x^4 + \boxed{\frac{2}{3}x^3} - x^2 + \frac{1}{10}x^4 - \boxed{\frac{1}{6}x^3}$

$\frac{4}{10}x^4 + \frac{1}{10}x^4 = \frac{5}{10}$ $\frac{4}{6}x^3 - \frac{1}{6}x^3 = \frac{3}{6}$

$\frac{1}{2}x^4 + \frac{1}{2}x^3 - x^2$

TASK 3: Write a polynomial that describes the total area of the squares and rectangles. Then simplify the polynomial.

a)

$3x^2 + 7x + 9$

b)

$4x^2 + 7x + 4$

TASK 1: Simplify each polynomial by combining any like terms. Write in standard form.
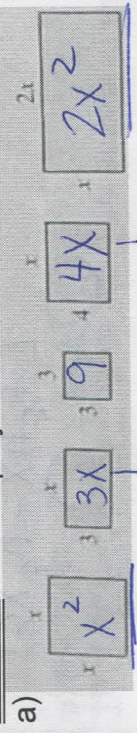
a) $-3x + 7x$

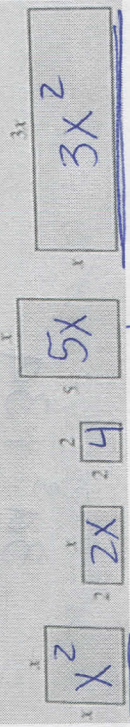$4x$

b) $x + 3x^2$

$3x^2 + x$

c) $9x^3 + x^3$

$10x^3$

d) $11x^2 + \boxed{5} + 2x^2 \boxed{-7}$

$13x^2 - 2$

OBJECTIVE 4: Adding & Subtracting Polynomials
Adding Polynomials is simply combining all like terms.

TASK 5: Add by CLT. Write your final answer in standard form.

a) $(7x^3y - xy^3 + 11) + (6x^3y - 4)$

$13x^3y - xy^3 + 7$

b) $(3a^3 - b + 2a - 5) + (a + b + 5)$

$3a^3 + 3a$

c) $(4y^2 + x - 3x - 7) + (x + y^2 - 2)$

$5y^2 + 2x - 3y - 9$

d) $(11x^3 - 12x^2 + x - 3) + (x^3 - 10x + 5)$

$+ x^3 + 0x^2 - 10x + 5$

$12x^3 - 12x^2 - 9x + 2$

e) $(-3x^2 + 7x^3 + 3x - 4) + (3x^2 - 9x + 11)$

$+ 3x^2 + 10x^3 - 9x + 11$

$7x^3 - 6x + 7$

f) $(-8a^2b - ab^2 + 10) + (-2ab^2 - 10)$

$-8a^2b - 3ab^2$

Subtracting Polynomials: distribute the − to its ( ) and then add by combining all like terms.

$$a - b = a + (-b) \qquad OR \qquad P(x) - Q(x) = P(x) + [-Q(x)]$$

TASK 6: Subtract then write the answer in standard form.

a) $(2x^3 + 8x^2 - 6x) - (2x^3 - x^2 + 1)$

$9x^2 - 6x - 1$

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

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

c) $(9a^2b^2 + 6ab - 3ab^2) - (5b^2a + 2ab - 3 - 9b^2)$

$9a^2b^2 - 8ab + 4ab^2 + 9b^2 + 3$

TASK 7: Perform the indicated operations and then write your final answer in standard form.

a) Subtract $(5z - 7)$ from the sum of $(8z + 11)$ and $(9z - 2)$

$17z + 9$
$-(5z + 7)$
$12z + 16$

b) Subtract $(3x + 5)$ from the sum of $(8x - 11)$ and $(2x + 5)$

$10x - 6$
$-(3x + 5)$
$7x - 11$

c) Subtract $(-4a + 6)$ from the sum of $(9a - 7)$ and $(5a + 8)$

$(14a + 1)$
$-(-4a + 6)$
$18a - 5$

Still need help with: