

No clickers or calculators.

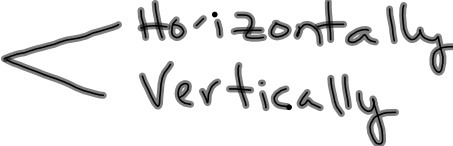
Need a piece of notebook paper for OPENERS. Write today's date at the top.

Answer the following question:

Which way do you prefer to add/subtract polynomial functions? Vertically or Horizontally

Mar 23-11:37 AM

### Alg 2 Section 3.5: Adding & Subtracting Polynomials

- 1) Write each expression in standard form  
(exponents in descending order)
- 2) Align like-terms 
- 3) Add or subtract like-terms ONLY

**EXAMPLE 1-2:**

Use a horizontal arrangement to find the sum. Write the answer in standard form

$$(3x^2 - 5x + 9) + (-3 + 7x^2)$$

$$(3x^2 + 7x^2) + (-5x) + (9 + -3)$$

$$10x^2 - 5x + 6$$

$$(-3x^5 + 11x^2 - 8x + x^5 + 2) + (8x - 2x^4 + 7x^3 - 3 + 12x^2)$$

$$\begin{array}{cccccccc} \textcircled{1} & & & & & & & & \\ 5 & & 4 & & 3 & & 2 & & 1 & & 0 \\ x^5 & + & (-2x^4) & + & (-3x^3 + 7x^3) & + & (11x^2 + 12x^2) & + & (-8x + 8x) & + & (2 - 3) \\ x^5 & - & 2x^4 & + & 4x^3 & + & 23x^2 & - & 1 \end{array}$$

**EXAMPLE 3-4:** Use a vertical arrangement to find the sum.

Write the answer in standard form

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

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

$$(2x^6 - x^5 + 3x^3 - 14x^2 + 13) + (7x^5 - x^4 + 9x^3 + 13x^2 + 2)$$

$$\begin{array}{cccccccc} 6 & 5 & 4 & 3 & 2 & 1 & 0 \\ 2x^6 & -x^5 & +0 & +3x^3 & -14x^2 & +0 & +13 \\ 7x^5 & -x^4 & +9x^3 & +13x^2 & +0 & +2 \end{array}$$

$$2x^6 + 6x^5 - x^4 + 12x^3 - x^2 + 15$$

Example 5-6: Use a horizontal arrangement to find the difference.

$$(11x^4 + x^3 - x + 5) - (x^4 + x^2 + 2x + 8)$$

Zap / Zap or Add OP

$$\begin{array}{r} 4 \quad 3 \quad 2 \quad 1 \quad 0 \\ (11x^4 + -x^4) + (x^3) + (-x^2) + (-x - 2x) + (5 + -8) \\ 10x^4 + x^3 - x^2 - 3x - 3 \end{array}$$

$$(-x^3 - 5x^2 + x - 1) + (x^3 + 3x^2 + 10x + 9)$$

$$\begin{array}{r} * \quad 3 \quad 2 \quad 1 \quad 0 \\ (-x^3 + x^3) + (-5x^2 + 3x^2) + (x + 10x) + (-1 + 9) \\ -8x^2 - 9x + 8 \end{array}$$

Ex 7-8: Use a vertical arrangement to find the difference.

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

$$\begin{array}{r} 4 \quad 3 \quad 2 \quad 1 \quad 0 \\ 3x^4 \quad 2x^3 \quad \quad -4x \quad +1 \\ -x^3 \quad +5x^2 \quad -2x \quad -6 \\ \hline 3x^4 + x^3 - 5x^2 - 6x - 5 \end{array}$$

$$(-3x^3 - 7x^2 + 4x - 8) + (-5x^3 + x^2 + 4x - 2)$$

$$\begin{array}{r} * \quad 3 \quad 2 \quad 1 \quad 0 \\ -3x^3 \quad -7x^2 \quad 4x \quad -8 \\ +5x^3 \quad -x^2 \quad -4x \quad +2 \\ \hline 2x^3 - 8x^2 - 6x - 6 \end{array}$$

PRACTICE Use the method you prefer.

$$(3x^2 + 5x + 17) + (x^2 - 2x - 12).$$

$$4x^2 + 3x + 5$$

Pg. 92

$$(3x^2 + 5x + 17) - (4x^2 - 5x + 13).$$

1-12 all

2	$3x^2$	$-4x^2$
1	$5x$	$+5x$
6	$17$	$-13$

Collect Pg. 88

$$-x^2 + 10x + 4$$