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# ADDING AND SUBTRACTING POLYNOMIALS



# Warm-Up

**Add:**     *Draw shapes around like terms!*

1.  $(2x - 9) + (x - 7)$

2.  $(8y^2 + 2) + (5 - 3y^2)$

3.  $(-3a^2 + 5) + (-a^2 + 4a - 6)$

4.  $(2m - 8m^2 - 3) + (m^2 + 5m)$

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



# Warm-Up

## Add:

1.  $3x - 16$

2.  $5y^2 + 7$

3.  $-4a^2 + 4a - 1$

4.  $-7m^2 - 3 + 7m$

5.  $3x^2 - 6x$



# Subtracting Polynomials

**OBJ: Students will subtract polynomials by combining like terms.**

# REVIEW

- **Subtract: *Use Keep-Change-Change!***

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$$1. \quad 6 - 9 = -3$$

$$2. \quad -3 - 5 = -8$$

$$3. \quad 10 - (-2) = 12$$

$$4. \quad 2 - (-11) = 13$$

$$5. \quad -8 - (-1) = -7$$



# Subtracting Polynomials

- **Use Keep – Change – Change.**
  - #1: Keep the first polynomial the same.**
  - #2: Change subtraction to addition.**
  - #3: Change the sign of each term in the 2<sup>nd</sup> polynomial.**
- **Drop the parentheses.**
- **Draw shapes around like terms.**
- **Combine like terms.**

# Subtracting Polynomials

EX 1:

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

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

$$\begin{array}{r} \boxed{7x} - \boxed{3} + \boxed{9x} + \boxed{-2} \\ \hline 16x - 5 \end{array}$$

# Subtracting Polynomials

EX 2:

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

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

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

$x^2 + x - 3$



# ON YOUR OWN!

**Subtract:** *Use Keep-Change-Change!*

1.  $(12x^3 + x^2) - (18x^3 - 3x^2 + 6)$

2.  $(-2y^2 + 2) - (5 - 6y^2)$

3.  $(-7x^2 + 12) - (6 - 4x^2)$

4.  $(3b + 2b^2 - 4) - (b^2 + b - 6)$

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



# ON YOUR OWN

## Subtract:

1.  $-6x^3 + 4x^2 - 6$

2.  $4y^2 - 3$

3.  $-3x^2 + 6$

4.  $b^2 + 2b + 2$

5.  $-n^3 + 3n^2 + 3n - 5$



# ON YOUR OWN

1. Use the tiles to write 1 of each problem:

- a) **Add 2 binomials together**
- b) **Add a binomial to a trinomial**
- c) **Add a trinomial to a trinomial**
- d) **Subtract 2 binomials from each other**
- e) **Subtract a binomial from a trinomial**
- f) **Subtract a trinomial from a trinomial**

2. Then, answer each problem .