Alg1 Unit6 Notes1 A.APR.1

I can use precise vocabulary when discuss polynomials.
I can add, subtract and multiply polynomials.

Recall some of the vocabulary we discussed at the beginning of the first semester…

• constant:

• variable:

• coefficient:

• term:

Now for the new vocabulary,

• polynomial:

• monomial:

• binomial:

• trinomial:

For $9x^2 + 5x - 6$,

a) How many terms are in this expression?

b) Name the polynomial by its number of terms.

c) What vocabulary word does the 5 represent?

d) What vocabulary word does the -6 represent?

e) Can you combine $9x^2$ and $5x$? Why or why not?

• like terms:

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We can use algebra tiles to represent a polynomial. Here are the tiles we will be using and their values.

$x^2 =$  $x =$  $+1 =$ 

The yellow tiles represent positive values; the red tiles represent negative values.

ADDING POLYNOMIALS

• zero pair:

Consider $(x^2 + 4x – 5) + (2x^2 – 2x + 8)$. Draw this computation out with algebra tiles. Then evaluate.

Describe how to **add** polynomials without using algebra tiles.

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

SUBTRACTING POLYNOMIALS

Consider $(4x^2 + 5x + 3) – (2x^2 + 3x + 2)$. Draw this computation out with algebra tiles. Then evaluate.

Describe how to **subtract** polynomials without algebra tiles.

Consider $(2x^2 + 2x – 4) – (x^2 – 3x -1)$.

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Independent Practice: Add or subtract the polynomials.

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

2. $-x^2 - 2x + 4 + 4x^2 + 9$

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

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

5. $(2x^2 + 8x - 1) - (3x + 9)$

6. $5x - 4x^2 + 12 - 9x - 20$

MULTIPLYING POLYNOMIALS

Consider $x(2x + 3)$. Draw out this computation with algebra tiles. Then evaluate.

Describe how to **multiply** a monomial by a polynomial.

Consider $3x(2x + 1)$.

Extend these ideas to multiply $2x(x^4 + 8x^2 - 3x + 5)$.

Consider $(x + 2)(x + 4)$. Draw out this computation with algebra tiles. Then evaluate.

Describe how to **multiply** a binomial by a binomial.

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Consider $(2x + 1)(x – 3)$.

Extend these ideas to multiply $(x^2 + 3x – 6)(x + 5)$.

Independent Practice: Multiply

1. $-5x(x – 6)$

2. $4x^2(x^3 + 7x – 3)$

3. $(4x + 8)(2x – 1)$

4. $(x^2 – 6)(x +2)$

5. $(x – 9)(x – 3)$

6. $(2x + 1)(6x^2 – 2x + 3)$