

## Ch 5: Polynomial Review

Terms with polynomials

**Monomial:** one term

**Binomial:** two terms

**Trinomials:** three terms

**Variables:** Letters

**Coefficients:** Numbers in front of letters

**Constant:** the number all by itself

**Degree:** the highest exponent on a variable

-constants have a degree of zero

Algebraic expressions that have terms with a letter in the denominator or the square root of a letter or fractional exponents

ARE NOT Polynomials!

$$\frac{13}{z} \quad \sqrt{g} \quad x^{\frac{1}{3}}$$

Like terms are  $-3x^2$  and  $4x^2$   
(same letter with the same exponents)

$$\begin{array}{|c|} \hline x^2 \\ \hline \end{array} \quad \begin{array}{|c|} \hline 1 \\ \hline \end{array} \quad \begin{array}{|c|} \hline 1 \\ \hline \end{array}$$

X

$$\begin{array}{|c|} \hline -x^2 \\ \hline \end{array} \quad \begin{array}{|c|} \hline -1 \\ \hline \end{array} \quad \begin{array}{|c|} \hline -1 \\ \hline \end{array}$$

-X

### Adding Polynomials

$$(5c - 11) + (-4c^2 + c + 7)$$

Remove the brackets.

$$5c - 11 - 4c^2 + c + 7$$

Group like terms.

$$-4c^2 + 5c + c - 11 + 7$$

Simplify like terms

$$-4c^2 + 6c - 4$$

### Dividing Polynomials

Divide numbers with numbers  
and letters with letters

-must use laws of exponents with letters

example:  $\frac{25r^9t^8}{5r^3t^4} = 5r^6t^4$

### Subtracting Polynomials

Slow down and change signs

$$(6x^2 - 4x + 2) - (-8x^2 - 9x + 2)$$

$$6x^2 - 4x + 2 + 8x^2 + 9x - 2$$

Gather like terms

$$6x^2 + 8x^2 - 4x + 9x + 2 - 2$$

simplify terms

$$14x^2 + 5x$$

### Multiplying Polynomials

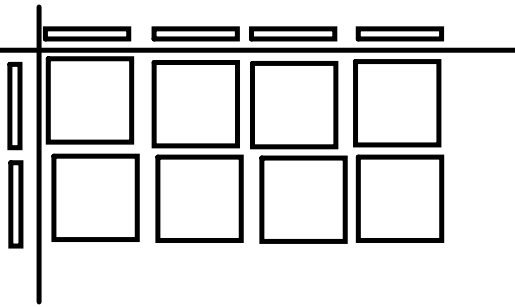
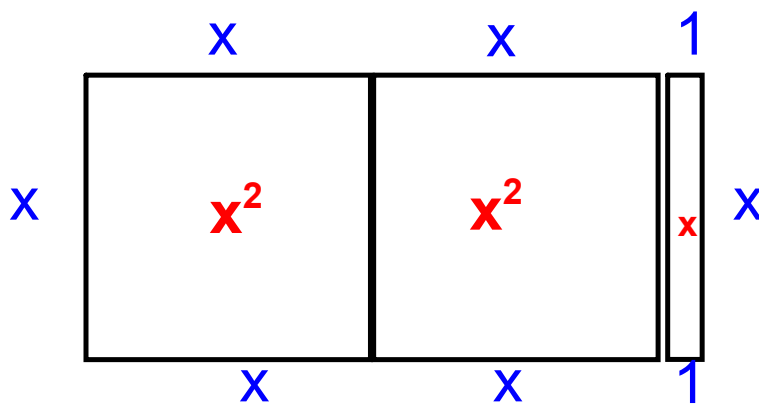
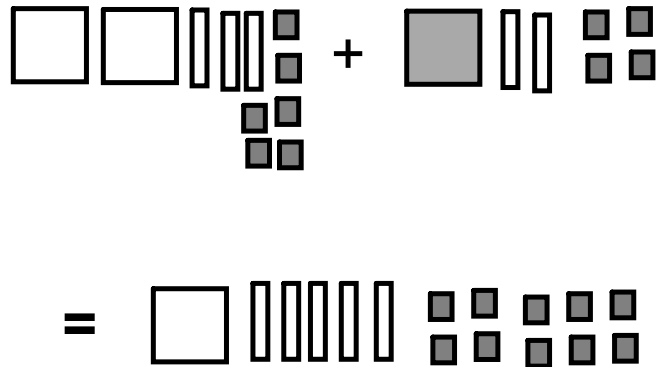
Multiply numbers with numbers  
and letters with letters

-must use laws of exponents with letters

example:  $(5r^2t)(6r^3t^8)$   
 $= 30r^5t^9$

Multiplication with algebra tiles

$$(2x)(4x) = 8x^2$$

Addition with algebra tiles

**Area** - is material inside the shape

- to calculate you just count the tiles

$$\text{Area} = 2x^2 + x$$

**Perimeter** - is the distance around an object

- to calculate you add the length of each side

$$\text{Perimeter} = (\text{side}) + (\text{Side}) + (\text{Side}) + (\text{Side})$$

$$\text{Perimeter} = (2x + 1) + (2x + 1) + (x) + (x)$$

$$\text{Perimeter} = 2x + 2x + x + x + 1 + 1$$

$$\text{Perimeter} = 6x + 2$$