Unit 2:

TODAY: basic terminology of polynomials
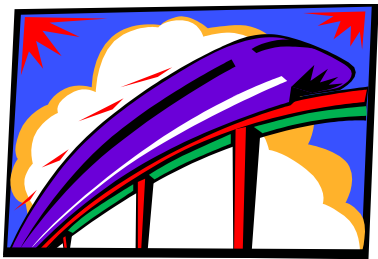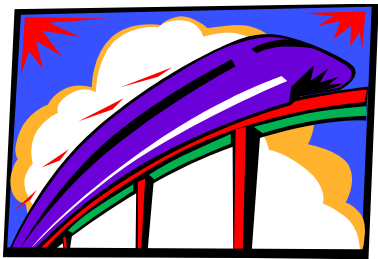
Polynomials

I. <u>MONOMIALS:</u>

A. A monomial is <u>a number or variable or a combination of</u> both

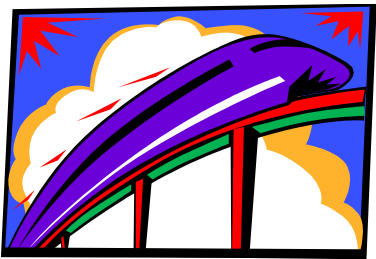B. Some examples of monomials are:

Polynomials

I. <u>BINOMIALS:</u>

   A. A BINOMIAL is <u>made up of 2 terms</u>
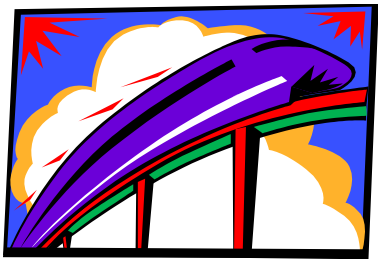
   B. Some examples of binomials are:

Polynomials

I. **TRINOMIALS**

   A. A Trinomial is <u>made up of 3 terms</u>

   B. Some examples of trinomials are:

II. POLYNOMIALS:

A. A polynomial is the __SUM__ or __Difference__ of monomials.

B. An example of a polynomial *in one variable*, x, would be

$$x^3 + 6x^2 + 12x + 8$$

C. How many MONOMIALS are there in the above polynomial?

4

III. The _____highest_____ exponent in the polynomial determines the <u>DEGREE OF A POLYNOMIAL</u> in one variable.

   A. Example: The degree of $-7x + 9 - 4x^2$ is __2__ because __2__ is the largest exponent in the polynomial.

   B. Example: Find the degree of the following polynomial: $x^4 + 6x^3 + 7x^5 + 12x$

Not 12$\rightarrow$**5**

IV. STANDARD FORM

A. The terms of a polynomial are in STANDARD FORM if they are ordered from left to right in **Descending** order; which means from the **greatest** exponent to the least.

B. To write a polynomial in Standard Form, **arrange** the terms of the polynomial in **Descending** order according to the **exponents** of the variables.

IV. STANDARD FORM

C. Example: Write $9 + x - 4x^3$ in standard form.

$$-4x^3 + x + 9$$

D. Example: Write $3x^2 - 2 + 4x - 5x^3$ in standard form.

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

V. Some polynomials have <u>**SPECIAL NAMES**</u> that are determined by the following:

A. Their <u>exponent</u> or

B. Their <u>Total #</u> of terms

<u># OF TERMS</u>

1 term: **MONOMIAL**

2 terms: **BINOMIAL**

3 terms: **TRINOMIAL**

4 + terms: **POLYNOMIAL**

<u>DEGREE</u>

1ST : **LINEAR**

2ND : **QUADRATIC**

3RD : **CUBIC**

4TH: **QUARTIC**

5TH: **QUINTIC**