**2.3 Division of Polynomials**

Terminology:

Division Statement:

**Long Division:**

Example 1: Divide P(x) = by .

Write the division statement:

Be very careful in the subtraction line! If a term is missing, then use a zero coefficient!

Example 2: Divide P(x) =3x+1 by .

**Synthetic Division:** is a shortcut to long division which works for division by ax+b

Example 3: Divide P(x) = by .

Division Statement:

Example 4: Divide P(x) =by .

Example 5: Divide P(x) = by.

Example6: Divide (

Example 7: When polynomial is divided by the remainder is . Determine the value of m.

Example 8: When is divided by, the remainder is 6. When this polynomial is divided by, the remainder is 12. Find the values of k and m.