State the degree and leading coefficient of each.

1. $y = (7x + 11)(9x - 15)$ Deg: 2 LC: 63

$(7x)(9x) = 63x^2$

2. $y = (2x - 7)(3x + 1)(4x - 9)$ Deg: 3 LC: 24

$= (2x)(3x)(4x) = 24x^3$

State the degree and leading coefficient of each.

3. $y = (x + 5)^2(x - 3)^2$ Deg: 4 LC: 1

$x^2 \cdot x^2 = x^4$

4. $y = (2x + 3)(x - 2)^3(x + 6)^3$ Deg: 7 LC: 2

$(2x)(x^3)(x^3) = 2x^7$

State the degree and leading coefficient of each.

5. $y = -2x(2x - 5)^3(3x + 1)^2$ Deg: 6 LC: -144

$= (-2x)(8x^3)(9x^2) = -144x^6$

6. $y = (2x + 9)^2(2 - 5x)^3(4 - 3x)^2$ Deg: 7 LC: -4500

$= (2x)^2(-5x)^3(-3x)^2$

$= (4x^2)(-125x^3)(9x^2) = -4500x^7$

5. The leading coefficient of a polynomial is

The coefficient of the term with the largest exponent when the polynomial is in expanded form.

Only the first coefficient if it is written in Standard Form.

What will be important for Ch 6 is whether the leading coefficient of a polynomial is POSITIVE or NEGATIVE

6. The degree of a polynomial is

The largest exponent when written in expanded form.

Only the first exponent when written in Standard Form

What will be important for Ch 6 is whether the degree of a polynomial is EVEN or ODD

For each of the following polynomials state if the:

Degree is EVEN or ODD

and

Leading Coefficient is POS or NEG

1. $y = 4x^2(x+3)^2(11-2x)(4x+1)^3$

$4x^2\ (x)^2\ (-2x)(4x)^3$

$(+)\ (+)\ (-)\ (+)$

$2+2+1+3=8$

DEG: EVEN LC: NEG

2. $y = -5x(7x-8)(2x+3)^2(9x-10)$

$-5x\ (7x)\ (2x)^2\ (9x)$

$(-)(+)(+)(+)$

$1+1+2+1=5$

DEG: ODD LC: NEG

3. $y = -3x^2(5x-6)^3(2-x)^2(7-4x)(8-3x)^3$

$-3x^2(5x)^3(-x)^2(-4x)(-3x)^3$

$(-)\cdot(+)\cdot(+)\cdot(-)\cdot(-)$

$2+3+2+1+3=11$

DEG: ODD

LC: NEG

You can now finish Hwk #23 Sec 6-1

Practice Sheet