**CURRIKI ALGEBRA UNIT 4**

Expressions and Equations

Lesson 4.1: Structure of Expressions and Equivalent Forms

Example Problems for Polynomials

Teacher Answer Key

**Polynomials**

**Example Problems**

*These step-by-step solutions will serve as a good review.*

**Degree of the Polynomial**

1) What is the degree of the polynomial −8*x*3*y*2 +9*x*4*y*4 +8*x*2*y* ?

The degree of the first term is 5, which we can determine by adding the exponents on the variables. The degree of the second term is 8, and the degree of the third term is 3. Thus, the degree of the polynomial is 8, which is the degree of the monomial term with the largest value.

**Adding or Subtracting Polynomials**

2) (*x*2 +*y*3 +1)+(2*y*3 +*y*2)=*x*2 +*y*3 +1+2*y*3 +*y*2 *x*2 +*y*3 +1+2*y*3 +*y*2 =*x*2 +3*y*3 +*y*2 +1

3) (4*m*3 +3*m*2 −6*m*)−(2*m*2 −5*m*+3)=4*m*3 +3*m*2 −6*m*−2*m*2 +5*m*−3 4*m*3 +3*m*2 −6*m*−2*m*2 +5*m*−3=4*m*3 +*m*2 −*m*−3

**Multiplying Polynomials**

4) −2*x*3 (3*x*2 − 4*x* + 8)= −6*x*5 + 8*x*4 −16*x*3 by distribution method

5) *y*3*z*(*y*2 −2*y* −3*z*)= *y*5*z*−2*y*4*z*−3*y*3*z*2 by distribution method

6) (2*x*+1)(*x*+2)= 2*x*2 +4*x*+*x*+2=2*x*2 +5*x*+2 by using the FOIL method

7) (*x*−3)(−3*x*−1)= −3*x*2 −*x*+9*x*+3=−3*x*2 +8*x*+3 by using the FOIL method

8) (2*x*+5)2 = (2*x*+5)(2*x*+5)=4*x*2 +20*x*+25 by the square of a sum rule

9) (3*x*−4*y*)2 = (3*x*−4*y*)(3*x*−4*y*)=9*x*2 −24*xy*+16*y*2 by the square of a difference

10) (2*x* + 3)(2*x* − 3) = 4*x*2 − 9 by the difference of squares rule