

# Only to be used for arranged hours

Math 31

Activity # 10

## Polynomials In Two Variables

Your Name: \_\_\_\_\_

A **polynomial in two variables**,  $x$  and  $y$ , is one monomial or the sum of several monomials of the form  $ax^ny^m$  where the real number  $a$  is called the \_\_\_\_\_ and the exponents on the variables are  $m$  and  $n$ .

The exponents  $m$  and  $n$  are \_\_\_\_\_.  
(what type of numbers?)

The **degree** of a monomial in two variables is the sum of the exponents on the variables.

The degree of  $ax^ny^m$  is \_\_\_\_\_

The **degree of a polynomial in two variables** is the greatest degree of any of the polynomial terms

Directions: Work collaboratively with team members and compare answers.

1. State the degree of the monomial  $-5^2x^2y$  and state the coefficient.

The degree is \_\_\_\_\_ and the coefficient is \_\_\_\_\_.

2. Fill in the table below by stating the degree of each term, the coefficient of each term and the degree of the polynomial.

$$-x^2y - 2^3x^3y^2 - \frac{xy}{4} - 3$$

Term				
Coefficient				
Degree				

The degree of the polynomial is \_\_\_\_\_.

## Only to be used for arranged hours

3. To evaluate a polynomial means to find the value of the polynomial by substituting the given values of the variables.

Evaluate  $\overset{A}{-x^2y^3} - \overset{B}{x^3y^2} - \overset{C}{(-5)^2(xy)^0} - \overset{D}{x^4y^5}$  for  $x = -2$  and  $y = -1$

4. Subtract the following polynomials.

$$\begin{array}{r|l|l|l|l} \overset{A}{-10^2x^3y^2} & + & \overset{B}{(-3)^3x^2y^2} & - & \overset{C}{(-7)^2x^2y} & + & \overset{D}{(-5)^3xy} \\ - & \left( \overset{A}{(-9)^2x^3y^2} + \overset{B}{(-4)^3x^2y^2} - \overset{C}{(-8)^2x^2y} - \overset{D}{(-1)^3xy} \right) & & & & & \end{array}$$

5. Find each product and simplify the expression.

$$\overset{A}{(-5^2x^2y)\left(\frac{1}{5}xy^2\right)} - \overset{B}{(-2xy)^2(xy)} + \overset{C}{[-2xy]^3} - \overset{D}{\frac{(-1xy)^4}{xy}}$$

6. Find each product and simplify the expression.

$$\overset{A}{(x-4)^2} - \overset{B}{(x-3)^2} - \overset{C}{(x-5)^2} - \overset{D}{(x-6)^2}$$

7. Simplify.

$$\overset{A}{(10x^4y^3)\left(\frac{-1x^3y^2}{5}\right)} + \overset{B}{(-8x^3y^4)\left(\frac{-1x^2y^2}{2}\right)} + \overset{C}{(-6x^5y^2)\left(\frac{-1x^2y^3}{3}\right)} + \overset{D}{(16x^2y^3)\left(\frac{-1}{4}x^3y^3\right)}$$