

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

Date: \_\_\_\_\_

## 7.1 Adding and Subtracting Polynomials

Essential Question: \_\_\_\_\_

A \_\_\_\_\_ is a number, a \_\_\_\_\_, or the \_\_\_\_\_ of a number and one or more \_\_\_\_\_ with \_\_\_\_\_ number exponents.

The \_\_\_\_\_ of a \_\_\_\_\_ is the \_\_\_\_\_ of the \_\_\_\_\_ of the variables in the monomials. The degree of a nonzero constant term is \_\_\_\_\_. The constant 0 does \_\_\_\_\_ have a \_\_\_\_\_.

Monomial	Degree	Not a monomial	Reason
10	0	$5 + x$	A sum is not a monomial.
$3x$	1	$\frac{2}{n}$	A monomial cannot have a variable in the denominator.
$\frac{1}{2}ab^2$	$1 + 2 = 3$	$4^a$	A monomial cannot have a variable exponent.
$-1.8m^5$	5	$x^{-1}$	The variable must have a whole number exponent.

### EXAMPLE 1 Finding the Degrees of Monomials

Find the degree of each monomial.

a.  $5x^2$

b.  $-\frac{1}{2}xy^3$

c.  $8x^3y^3$

d.  $-3$

## Polynomials

A \_\_\_\_\_ is a monomial or a \_\_\_\_\_ of monomials. Each monomial is called a \_\_\_\_\_ of the polynomial. A polynomial with \_\_\_\_\_ terms is called a \_\_\_\_\_. A polynomial with three terms is called a \_\_\_\_\_.

The \_\_\_\_\_ of a polynomial is the \_\_\_\_\_ degree of its terms. A polynomial in one variable is in \_\_\_\_\_ when the exponents of the terms \_\_\_\_\_ from \_\_\_\_\_ to \_\_\_\_\_. When you write a polynomial in standard form, the \_\_\_\_\_ of the first term is the \_\_\_\_\_ coefficient.

### EXAMPLE 2

#### Writing a Polynomial in Standard Form

Write  $15x - x^3 + 3$  in standard form. Identify the degree and leading coefficient of the polynomial.

### EXAMPLE 3

#### Classifying Polynomials

Write each polynomial in standard form. Identify the degree and classify each polynomial by the number of terms.

a.  $-3z^4$

b.  $4 + 5x^2 - x$

c.  $8q + q^5$