Section 5.3: Polynomials and Polynomial Functions

Monomial

- A <u>monomial</u> is a term that has no variable in its denominator, and its variables have only whole number exponents. For Example, $-7y$, $8x^2$, 12, $\frac{4}{5}a^2b^2$ are monomial terms.
- A <u>monomial</u> does not have variables with negative exponents in the numerator, positive exponents in the denominator, or fractional exponents.
- A <u>monomial</u> in x is an expression of the form kx^n, where **n** is a whole number and **k** is any real number. **n** is called the **degree** of the monomial, and **k** is the **coefficient**.

Degree of a Monomial

The <u>degree of a monomial</u> in more than one variable is the sum of the exponents of its variables.

Example 1: Determine whether the expression is a monomial. For those that are monomials, name the coefficient and give the degree.

	Monomial? (yes or no)	Coefficient	Degree
a. $2x^4$	_____	_____	_____
b. 9	_____	_____	_____
c. $5z^{-2}$	_____	_____	_____
d. $3x^5y^2$	_____	_____	_____
e. $4ab^{1/2}$	_____	_____	_____

Polynomial

- A <u>polynomial</u> is a monomial or the sum of monomials.

- The <u>degree of a polynomial</u> is the highest degree of any term of the polynomial.

The coefficient of the term of largest degree is called the <u>leading coefficient</u>.