

## Lesson 13-1

### Example 1 Classify Polynomials

Determine whether each expression is a polynomial. If it is, classify it as a *monomial*, *binomial*, or *trinomial*.

a.  $2x - \sqrt{x}$

The expression is *not* a polynomial because  $\sqrt{x}$  is not a monomial.

b.  $3x^3 + 2x - 9$

This is a polynomial because it is a sum of three monomials. There are three terms, so it is a trinomial.

### Example 2 Degree of a Monomial

Find the degree of each monomial.

a.  $-7m^4$

The variable  $m$  has degree 4, so the degree of  $-7m^4$  is 4.

b.  $2xy^7$

$x$  has degree 1 and  $y^7$  has degree 7. The degree of  $2xy^7$  is  $1 + 7$  or 8.

### Example 3 Degree of a Polynomial

Find the degree of each polynomial.

a.  $8x^4 - 3x + 2$

term	degree
$8x^4$	4
$3x$	1
2	0

The greatest degree is 4, so the degree of  $8x^4 - 3x + 2$  is 4.

b.  $m^3 + m^2n^2$

term	degree
$m^3$	3
$m^2n^2$	$2 + 2$ or 4

The greatest degree is 4, so the degree of  $m^3 + m^2n^2$  is 4.

**Example 4 Degree of a Real-World Polynomial**

**SPEED** The speed with which a dropped object accelerates is given by the polynomial  $2.7x^2 + 0.15x + 0.6$ , where  $x$  is the number of seconds after the object is dropped. Find the degree of the polynomial.

$$\underbrace{2.7x^2}_{\text{degree 2}} + \underbrace{0.15x}_{\text{degree 1}} + \underbrace{0.6}_{\text{degree 0}}$$

So,  $2.7x^2 + 0.15x + 0.6$  has degree 2.