

**LESSON**  
**6-3**

**Practice A**  
**Polynomials**

Find the degree and number of terms of each polynomial.

1.  $4w^2$

Degree: \_\_\_\_\_

Terms: \_\_\_\_\_

2.  $9x^3 + 2x$

Degree: \_\_\_\_\_

Terms: \_\_\_\_\_

3.  $4p^5 - p^3 + p^2 + 11$

Degree: \_\_\_\_\_

Terms: \_\_\_\_\_

Fill in each blank with *monomial*, *binomial*, or *trinomial*.

4. A \_\_\_\_\_ is a polynomial with three terms.

5. A \_\_\_\_\_ is a polynomial with one term.

6. A \_\_\_\_\_ is a polynomial with two terms.

Write each polynomial in standard form.

Then, give the leading coefficient.

7.  $12 + 3x^2 - x$  \_\_\_\_\_

8.  $g^4 - 2g^3 - g^5$  \_\_\_\_\_

9.  $k^2 + k^4 - k^3 + 1$  \_\_\_\_\_

First, classify each polynomial by its degree (*linear*, *quadratic*, *cubic*, or *quartic*).

Then, classify it by its number of terms (*monomial*, *binomial*, or *trinomial*).

10.  $109z^2$

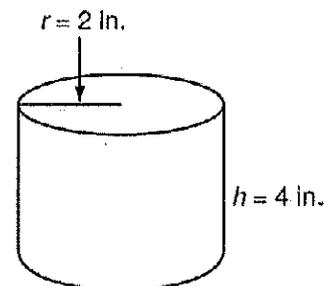
11.  $3x + 11$

12.  $b^3 - 2 + 2b^4$

13. Complete the table by evaluating the polynomial for each value of  $z$ .

Polynomial	$z = 0$	$z = 1$	$z = 2$	$z = -1$	$z = -2$
$2z + 3z^2 - 3$		2			5

14. The surface area of a cylinder is approximated by the polynomial  $6r^2 + 6rh$ , where  $r$  is the radius and  $h$  is the height of the cylinder. Find the approximate surface area of the cylinder at right.



**LESSON**  
**6-3**

**Practice B**  
**Polynomials**

Find the degree and number of terms of each polynomial.

1.  $14h^3 + 2h + 10$

\_\_\_\_\_

\_\_\_\_\_

2.  $7y - 10y^2$

\_\_\_\_\_

\_\_\_\_\_

3.  $2a^2 - 5a + 34 - 6a^4$

\_\_\_\_\_

\_\_\_\_\_

Write each polynomial in standard form. Then, give the leading coefficient.

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

\_\_\_\_\_

5.  $7 - 50j + 3j^3 - 4j^2$

\_\_\_\_\_

6.  $6k + 5k^4 - 4k^3 + 3k^2$

\_\_\_\_\_

Classify each polynomial by its degree and number of terms.

7.  $-5t^2 + 10$

\_\_\_\_\_

\_\_\_\_\_

8.  $8w - 32 + 9w^4$

\_\_\_\_\_

\_\_\_\_\_

9.  $b - b^3 - 2b^2 + 5b^4$

\_\_\_\_\_

\_\_\_\_\_

Evaluate each polynomial for the given value.

10.  $3m + 8 - 2m^3$  for  $m = -1$

\_\_\_\_\_

11.  $4y^5 - 6y + 8y^2 - 1$  for  $y = -1$

\_\_\_\_\_

12.  $2w + w^3 - \frac{1}{2}w^2$  for  $w = 2$

\_\_\_\_\_

13. An egg is thrown off the top of a building. Its height in meters above the ground can be approximated by the polynomial  $300 + 2t - 4.9t^2$ , where  $t$  is the time since it was thrown in seconds.

a. How high is the egg above the ground after 5 seconds?

\_\_\_\_\_

b. How high is the egg above the ground after 6 seconds?

\_\_\_\_\_

**LESSON**  
**6-3**

**Practice C**  
**Polynomials**

Find the degree and number of terms of each polynomial.

1.  $5t^5 + 60 + 3t^3$

2.  $9p + 31p^9 + 6p^2 - 42$

3.  $-50 + 4r - r^3 + r^2 - 4r^5$

\_\_\_\_\_

\_\_\_\_\_

Simplify and write each polynomial in standard form. Then, give the leading coefficient.

4.  $4g^3 + 8g - 4g^3 + 2g^2$

\_\_\_\_\_

5.  $13 - 5h^3 + h^2 - h$

\_\_\_\_\_

6.  $2(3x + 4) - 4x + 8x^2$

\_\_\_\_\_

Classify each polynomial according to its degree and number of terms.

7.  $6t^3 + 54t^4 - 1$

\_\_\_\_\_

8.  $14 \cdot 3w^2 + w$

\_\_\_\_\_

9.  $4(4s^2 - s) - 11 + s^7$

\_\_\_\_\_

Evaluate each polynomial for the given value.

10.  $4m - 4 - 4m^3$  for  $m = -2$

\_\_\_\_\_

11.  $12y^7 - 6y^2 - 8y^3 - y$  for  $y = -1$

\_\_\_\_\_

12.  $-3a + a^3 - \frac{1}{3}a^2$  for  $a = 3$

\_\_\_\_\_

13. A certain company's profit in dollars can be modeled with the polynomial

$-\frac{1}{2}x^2 + 100x - 200$  where  $x$  is the number of items produced and sold.

a. What is the profit if they produce and sell 10 of their products?

\_\_\_\_\_

b. What is the profit if they produce and sell 100 of their products?

\_\_\_\_\_

c. Evaluate the company's profit polynomial for  $x = 0$ . What does this number represent?

\_\_\_\_\_