VOCABULARY

$2x$

$3y - 1$

$4m^2 + 3m - 2 = 11$

$-5q^3r^2 - 9q^2r + 3qr + 1 = 7$

$21a^4b^2 + 13a^3bc + 11a^2c - 7a + 3bc < -1$

Identifying Polynomials: Given the polynomial, identify the coefficients and degree of each term.

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

First term: degree=   coefficient =

Second term: degree=   coefficient =

Third term: degree=   coefficient =

Fourth term: degree=   coefficient =

Fifth term: degree=   coefficient =

What is the leading coefficient?

What is the degree of the leading term?

What is the degree of the polynomial?

Evaluating Expressions: **Evaluate the following expressions for the given values.**

1. $-|-n|$, if $n = -18$

2. $-8x-7$ for $x = -6$

3. $-5(x-8)^2+1$ for $x = 3$

4. $-2x^3-3y^2$ when $x = 3$ and $y = -4$

5. $3a^2+6b^4$ when $a = 3$ and $b = 4$

6. $\dfrac{-b+\sqrt{d}}{2a}$ for $a = 5$, $b = -2$, $d = 49$

7. b^2-4ac for $a = -6$, $b = -8$, and $c = -4$

8. The volume of a cone with height h and radius r can be found using the formula $V = \frac{1}{3}\pi r^2 h$
   Find the volume of a cone with radius 7 feet and height 8 feet.

Practice: For each given term, circle the like terms.

1. $3x^2$ $\qquad$ $5x^2$ $\qquad$ $3y^2$ $\qquad$ $3x$ $\qquad$ none of these

2. $-m^2n^4$ $\qquad$ m^2n^4p $\qquad$ $-3n^4$ $\qquad$ $5m^2n^4$ $\qquad$ none of these

3. $4abc$ $\qquad$ 4 $\qquad$ abc $\qquad$ $-101abc$ $\qquad$ none of these

4. $9w^6x^3y^8$ $\qquad$ $9w^6y^8$ $\qquad$ $w^5x^3y^8$ $\qquad$ $9w^6x^3y^{-8}$ $\qquad$ none of these

5. pqr^2 $\qquad$ p^1qr^2 $\qquad$ $p^2q^2r^2$ $\qquad$ $(pqr)^2$ $\qquad$ none of these

Adding (and Subtracting) Polynomials

EXAMPLES

Add or subtract the polynomials:

1. $(-8x^4+9x^3+3x)+(-9x^4-6x^3-10)$

2. $(-5x^5-6x^2-10)-(-8x^5-3x^2-5x)$

Practice: Add or subtract the polynomials.

1. $(20t^2-5t^6)+(5t^6-2t^2)$

2. $(13v^8-8v)+(11v^7+2v^8)$

3. $(9x^3+10x^2+8x)-(10x^4+11x^3+4x^2)$

4. $(8a^2-6a-9)-(3a^2-9a+1)=$

5. $(8x^2+7x-1)+(-9x^3+x+3)-(2x^3+9x^2+6)$

6. $\left(-2x^3+12x^2-4\right)+\left(-11x^3-6x^2-9x+8\right)$

7. $\left(-8x^5+6x^4+5x^2+8\right)+\left(7x^5+5x^4+11x^3-3\right)$

8. $\left(10x^3-5x^2+4x-1\right)-\left(-3x^5-9x^3+12x^2-8x\right)$

9. $\left(7x^3+8x^2-x+4\right)+\left(7x^3+2x^2+4x-9\right)=$

10. $\left(24w^2-12w+1\right)-\left(2w^2-9w+5\right)+\left(-19w^2+10w-10\right)$

11. $\left(-16w^2-7w+4\right)-\left[\left(3w^2-10w-11\right)-\left(27w^2-11w-2\right)\right]$

12. $\left[\left(11y^2+4y+8\right)-\left(-4y^2-13y-1\right)\right]-\left(11y^2+31y+7\right)$