

Warm-Up:

Simplify.

1) $(p^{-6}n^3)(p^2n^5)$

$$p^{-4}n^8$$

$$\frac{n^8}{p^4}$$

2) $\frac{15a^{11}b^{-5}}{3a^3b^7}$

$$\frac{5a^8}{b^{12}}$$

50, 40, 32

32) $\frac{\cancel{15}b}{\cancel{3}\cancel{45}b^5}$

$\frac{\cancel{b}}{\cancel{b} \cdot b \cdot b \cdot b \cdot b}$

$$\frac{1}{3b^4}$$

40) $\left(\frac{1}{2}\right)^n$

50) $(a^n)(a^3)$

$$a^{n+3}$$

Section 7-3: Polynomials

A **polynomial** is one monomial or a sum of monomials.

$$x^{15} \quad y^3 + 17x - 192 \quad .5v^6 - w^3 - 5z + 83c$$

A **binomial** is polynomial with two terms.

$$x + 3 \quad 10y^5 - 18 \quad 61z + 49a$$

A **trinomial** is a polynomial with three terms.

$$x^2 - 16x + 64 \quad v^3 + 6v^2 - 12v \quad 12b^4 - 14b^2 + 2$$

Examples:

State whether each is a polynomial. If it is, identify it as a *monomial*, *binomial*, or *trinomial*.

1) $6 - 4x$ **binomial**

2) $x^2 + 2xy - 7$ **trinomial**

3) $\frac{14d + 19e^3}{5d^4}$ **Not a polynomial**

4) $26b^2$ **Monomial**

The **degree of a monomial** is the sum of the exponents of all the variables.

The **degree of a polynomial** is the largest degree of each term.

Examples:

Find the degree of each polynomial.

5) $12 + 5b + 6bc + 8bc^2$

$\uparrow \quad \uparrow \quad \uparrow \quad \uparrow$
 $0 \quad 1 \quad 2 \quad 3$

3

6) $9x^2 - 2x - 4$

$\uparrow \quad \uparrow \quad \uparrow$
 $2 \quad 1 \quad 0$

2

7) $14g^2h^5j$

8

A polynomial written with the powers going from greatest to least is in *descending order*.

Examples:

Arrange the terms in the polynomial so that the powers of x are in descending order.

8) $8 + 7x^2 - 12xy^3 - 4x^3y$

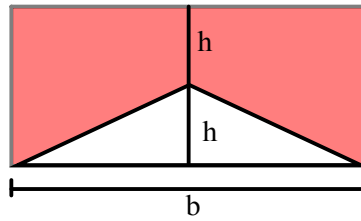
$$-4x^3y + 7x^2 - 12xy^3 + 8$$

9) $a^4 + ax^2 - 2a^3xy^3 - 9x^4y$

$$-9x^4y + ax^2 - 2a^3xy^3 + a^4$$

Examples:

10) Write a polynomial to express the area of the shaded region.



$$A_{\square} - A_{\triangle}$$

$$l \cdot w - \frac{1}{2}bh$$

$$b(2h) - \frac{1}{2}bh$$

$$2bh - \frac{1}{2}bh$$

$$\frac{3}{2}bh$$

Homework: pg. 379-381 #12-32 even, 42-48 even, 60

Section 7-3 Vocab

Quiz 7-1, 7-2, 7-3 Next Class