

Algebra Ch. 10

10-1 Warm-Up

1. $3x^2 + 1x^2 + x$
 $\underline{4x^2 + x}$

2. $\frac{9mn^3}{3n^4}$
 (Handwritten notes: $n \cdot n \cdot n$ above the numerator, $n \cdot n \cdot n \cdot n$ below the denominator)

$\frac{3m}{n}$

3. $6y^2 + y(y + 5)$
 $6y^2 - 1y^2 - 5y$
 $5y^2 - 5y$

Algebra 10-1 Polynomials

$a^{-1} = \frac{1}{a^1}$ ← Not a monomial

Word	Definition	Example
<u>Monomial</u> 1	- can have a real #, Variable, or combo - No negative exponents!	7, a, 7ab -5a ² b, 9xy ² z
<u>Binomial</u> 2	- 2 terms (or monomials) that are added or subtracted	2y ² - 5x -5 + 3abc
<u>Trinomial</u> 3	- 3 terms (or monomials) that are added or subtracted	5y ² - 3y + 6 5z ² - 6y + 3a

<p><u>Polynomial</u> many</p>	<p>- a monomial or Sum of monomials</p>	$\begin{matrix} 3x \\ 5x - y \\ 4 - 3x + 8y \\ 5x - 9y + 3z - 8 \end{matrix}$
<p>Standard Form</p>	<p>- largest exponent to smallest</p>	$x^5 + 4x^4 + 2x^3 + x^2 - x + 2$
<p>Degree</p>	<p>The sum of the exponents of the variables * More than 1 term - pick the largest</p>	$\begin{matrix} 4x & D: 1 \\ 5x^2y^6 & D: 8 \\ 2x + 3x^2y^9 & D: 11 \\ \uparrow & \uparrow \\ 1 & 11 \end{matrix}$ $\begin{matrix} 4x^2y^{12} + 3x^1y^1 + 8 \\ \downarrow & \downarrow & \downarrow \\ 14 & 2 & 0 \\ D: 14 \end{matrix}$

Linear	Quadratic
<p>* makes a line * $y = mx + b$ * Degree: 1</p>	<p>* makes a parabola - U-shape * $y = ax^2 + bx + c$ * Degree: 2</p>

Examples

1. Tell whether each expression is a polynomial. If so, give its degree.

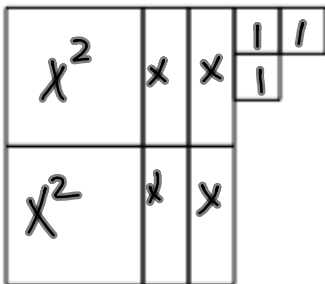
a. $15x^2y^1$
 yes, Degree: 3

c. 201
 yes. Degree: 0

b. $\frac{-6}{x^2} = -6x^{-2}$ No!
 d. $12x^5y + x^2$
 yes: Degree: 6

No variables in denominator or negative exponents!

2. Write a polynomial that represents these tiles. Give the degree.



$$2x^2 + 4x + 3$$

\downarrow \downarrow \downarrow
 2 1 0

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Assignment: 10-1 #'s 1-26, skip 2 & 16
