

1A-BE Monday 4-20-09 {Welcome Back from Spring Break!}

- ① DEFINE "MONOMIAL"
- ② LIST THE SIX EXPONENT RULES AND give an example of each.

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- 5 weeks of classes left
 - 1. Exam 1
 - 2. Quiz 4
 - 3. Quiz 5
 - 4. Exam 2
 - 5. Quiz 6
- } NEW STUFF
- } Course review problems with AHSSE practice
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- {SENSEI EXAMS}

- 4 MORE SATURDAYS $\Rightarrow$ 4/25, 5/2, 5/9, 5/16
- LAST AFTER SCHOOL $\Rightarrow$ 5/22 (Quiz 6 Friday)

MONOMIAL
ONE
Number, variable, or product of (multiply)
A number and variable(s).

(EX) $5, x, x^2, xy, 4x^3y^2$

POLYNOMIAL
MANY
A monomial or a sum of monomials.
(add or subtract)

(EX) $5, x, 5-x, 6x+3y-2$

Combine all like terms! Like terms have the same variable(s) and each variable has the same exponent.

(EX) $5x^2 + 2y + 3x + 4x^2$
 $\Rightarrow 9x^2 + 2y + 3x$

Polynomials of 1, 2, and 3 terms have special names:

x
MONOMIAL
or
1-term polynomial

$x+y$
BINOMIAL
or
2-term polynomial

$x+y+z$
TRINOMIAL
or
3-term polynomial

After 3, they are just "N-term" polynomials
(EX) 8-term polynomial

IDENTIFY POLYNOMIALS (WHY OR WHY NOT, SPECIAL NAME?)

Ⓐ $2x - 3yz$ Yes, sum of two monomials BINOMIAL

Ⓑ $8N^3 + 5N^{-2}$ No, because $N^{-2} = \frac{1}{N^2}$ so you are dividing variables.

Ⓒ -8 Yes, A 1-term POLYNOMIAL MONOMIAL

Ⓓ $4a^2 + 5a + a + 9$ Yes, A sum of monomials but, simplifies to $4a^2 + 6a + 9$ TRINOMIAL

THIS WAS EX 1 Pg 432
Ch. 8-4 POLYNOMIALS

Polynomials have an important property called the degree of the polynomial.

It is not its temperature!

But it does indicate how complicated the polynomial is.

Degree of A
MONOMIAL

the sum of the exponents (add) of all the variables, and only the variables, of the monomial.

⊗ $2x^2 \Rightarrow$ degree is 2

$5x \Rightarrow$ degree is 1

$4xyz^5 \Rightarrow$ degree is 7

$3 \Rightarrow$ degree is 0 why? $3x^0 = 3$

Degree of A
POLYNOMIAL

LOOK AT EACH monomial in the polynomial and find its degree. Identify the biggest - that is the degree of the whole polynomial.

DO NOT ADD THE monomials!

(Ex) $5x + 2y^3 + 6xy + 4$ Degree?

$\underbrace{\quad}$ $\underbrace{\quad}$ $\underbrace{\quad}$ $\underbrace{\quad}$
 degree 1 degree 3 degree 2 degree 0

This is a 4-term polynomial
 of degree 3

Ascend $\Rightarrow$ go up $\nearrow$
 descend $\Rightarrow$ go down $\searrow$

(M*) d = decrease

You normally arrange polynomials in
 descending order by degree $\Rightarrow$ highest degree
 monomial first

$\Rightarrow 2y^3 + 6xy + 5x + 4$

$\uparrow$
 Numbers ALWAYS LAST

If you are asked to put them in ascending
 order, start with the smallest degree
 (This is NOT normal !!)

FIND THE degree of EACH polynomial
AND list them in CONVENTIONAL order by degree.
(descending $\Rightarrow$ highest first)

Ex $5mn^2$

degree 3
MONOMIAL

Ex $-4x^2y^2 + 3x^2 + 5$

degree 4
TRINOMIAL

ALREADY in order

Ex $3a + 7ab - 2a^2b + 16$

degree 3
4-term poly

$-2a^2b + 7ab + 3a + 16$

Ex $7x^2 + 2x^4 - 11$

degree 4
TRINOMIAL

$2x^4 + 7x^2 - 11$

Ex $2xy^3 + y^2 + 5x^3 - 3x^2y$

degree 4
4-term poly

$2xy^3 + 5x^3 - 3x^2y + y^2$

WHAT IF you were ASKED TO PUT THESE
in order by degree of x ?

$5x^3 - 3x^2y + 2xy^3 + y^2$

↑ ↑ ↑ ↑
3 2 1 0

Ex 3:4 Pg 433

• Read Ch 8-4

• Pg. 434 #1-10