

BE-1B WEDNESDAY 10-24-07

① Simplify: $(x^3)^2 (3x^2)^2$

② Simplify: $(4mn^6)^2$

③ Solve: $6a - 5 > 2a + 3$

~~~~~ AHSGE WB ~~~~~

① Pg 33 #9

③ Pg 43 #8

② Pg 33 #10

POLYNOMIAL

ONE OR MORE  
MONOMIALS SEPARATED  
BY ADDITION OR SUBTRACTION.

EXAMPLES:

$2x$  monomial AND A polynomial

$2x + 3$  polynomial (special name  
is binomial)

$2x + 4y - 3x^2$  polynomial (special  
name is trinomial)

$4a^2 + 5a + a + 9$  polynomial  
(no special name)

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$\frac{x}{y}$  NOT A POLYNOMIAL

$x^{-2}$  NOT A polynomial since  $x^{-2} = \frac{1}{x^2}$

degree of a  
monomial

the sum of the  
exponents of all  
of its variables

| <u>Monomial</u> | <u>Degree</u> |
|-----------------|---------------|
| $3x^2$          | 2             |
| $5xyz^5$        | 7             |
| $4^2x^8$        | 8             |
| 9               | 0             |
| $8y^4$          | 4             |
| $3a$            | 1             |
| $-2xy^2z^3$     | 6             |
| 7               | 0             |

degree of a  
polynomial

find the degree of  
each monomial term  
in the polynomial.  
The highest monomial  
degree becomes the  
degree of the entire  
polynomial.

| <u>Polynomial</u>       | <u>Degree</u> |
|-------------------------|---------------|
| $3x^2 + 2y^5$           | 5             |
| $8x^5 + 4y^3 - 3xy^8$   | 9             |
| $5mn^2$                 | 3             |
| $-4x^2y^2 + 3x^2 + 5$   | 4             |
| $3a + 7ab - 2a^2b + 1b$ | 3             |

POLYNOMIALS ARE NORMALLY WRITTEN WITH THE highest degree monomial first, followed by the next highest degree monomial, etc.

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For ties, alphabetical order is usually preferred.

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Ex) Rewrite:  $6x^2 + 5 - 8x - 2x^3$   
 $- 2x^3 + 6x^2 - 8x + 5$

ex) Rewrite:  $3a^3x^2 - a^4 + 4ax^5 + 9a^2x$   
 $4ax^5 + 3a^3x^2 - a^4 + 9a^2x$

→ DESCENDING ORDER BY DEGREE →

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YOU MIGHT BE ASKED TO PUT THIS IN ASCENDING ORDER.

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Homework: Read Ch 8-4 • Pg 434-5 # 15-20  
 25-30  
 45.