Algebra 1A BE! Monday 3-21-11

1. Find m through the points: $(4,-6), (-2,-1)$
2. Use the "$y = mx + b$" twice method and find the equation of the line through the points in (1.)
3. Solve and graph: $3 < x - 5 < 8$

- Mark up the Quiz 1 questions carefully with the ones you missed with the correct answer. Keep for study and redo if needed.

VARIABLE A SYMBOL THAT REPRESENTS (TAKES THE PLACE OF) A NUMBER OR NUMBERS.

IN ALGEBRA 1A WE NORMALLY USE SINGLE LETTERS FOR VARIABLES, X IS OUR "FAVORITE"

CONSTANT A NUMBER, (EX) $4, \frac{1}{2}, \pi, 0.2, 6^2, \sqrt{9}$.

PRODUCT THE RESULT OF MULTIPLICATION.

MONOMIAL A NUMBER, A VARIABLE, OR THE PRODUCT OF A NUMBER AND ONE OR MORE VARIABLES.

EX) $2, x, 5x, 8xy, x^2yz^3, \frac{1}{2}x, 3\sqrt{2}xy, \frac{x}{2}$

NOT MONOMIALS) $3x+2, \frac{1}{x}, \frac{2}{x}, \frac{x}{y}$

↑ ↑ TWO MONOMIALS

Ex 1 Pg 44

Ch. 8-1 Multiplying Monomials

Identify the monomials, give reason ⇒ why or why not...

(A) -5

(B) $p+g$

(C) x

(D) $\frac{c}{d}$

(E) $\frac{abc^8}{5}$

Powers $(\text{BASE})^{\text{EXPONENT}}$

Ex) $2^5 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

↑ ↑ ↑ ↑ ↑

5 multiplications

"The base times itself an exponent number of times.

(Ex) $3^2 = ?$

When multiplying monomials, for example $(5x^7)(x^6)$ there are some shortcuts (rules) that can be used. Lets find the first rule ourselves:

(Ex) $2^4 \cdot 2^5$ or $(2^4)(2^5)$

$= (2 \cdot \underbrace{2 \cdot 2 \cdot 2}_{2^4})(\underbrace{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}_{2^5}) = 2^9$

What is the shortcut to go from $2^4 \cdot 2^5 = 2^9$?

yes! Add the exponents.

WARNING! ONLY IF BASES ARE SAME!

$2^4 \cdot 3^5 = 2^4 \cdot 3^5$ CAN'T use SHORTCUT!

EXPONENT RULE 1

MR
MULTIPLICATION
RULE
(for EXPONENTS)

When multiplying powers with the same base, add the EXPONENTS

$$a^n a^m = a^{n+m}$$

For the exponent rules, $a, b, \ldots$ are used for the base (to represent <u>ANY</u> base) and m and n are used to represent ANY exponent. We only need a, m, n for the MULTIPLICATION RULE.

(Ex) $x^4 x^8 = x^{12}$

$xxx = x^3$

$(5x^7)(x^6) = (5x^7)(1x^6)$

$= 5 \cdot 1 \cdot x^7 \cdot x^6 = 5x^{13}$

Practice: Pg. 413 # 4 to 8

Homework: Pg 413 # 15 to 26