

Algebra 1A BE | MONDAY 3-22-10

- 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: $3 < x - 5 < 8$
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- MARK UP the Quiz 1 questions
carefully with the ones you
missed with the correct answer.
Keep for study and redo if needed.

1.

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

NOT monomials) $3x+2$, $\frac{1}{x}$, $\frac{2}{x}$, $\frac{x}{y}$
 $\uparrow \quad \uparrow$
 two monomials

Ex 1
Pg 44

Ch. 8-1 Multiplying Monomials
Identify the monomials, give reason $\Rightarrow$ why or why not...

Ⓐ -5

Ⓑ $p + q$

Ⓒ x

Ⓓ $\frac{c}{d}$

Ⓔ $\frac{abc^8}{5}$

powers (BASE)^{EXPONENT}

ex) $2^5 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$
 $\uparrow \uparrow \uparrow \uparrow \uparrow$

5 multiplications

"The base times itself AN
EXPONENT number of times."

Ⓔ $3^2 = ?$

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

$$\textcircled{\text{Ex}} \quad 2^4 \cdot 2^5 \text{ or } (2^4)(2^5)$$

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

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

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

For the exponent rules, $a, b, \dots$ are used for the base (to represent any base) and m and n are used to represent any exponent. We only need a, m, n for the Multiplication Rule.

$$\textcircled{\text{Ex}} \quad x^4 x^8 = x^{12}$$

$$x x x = x^3$$

$$\begin{aligned} (5x^7)(x^6) &= (5x^7)(1x^6) \\ &= 5 \cdot 1 \cdot x^7 \cdot x^6 = 5x^{13} \end{aligned}$$

Practice: Pg. 413 # 4 to 8

Homework: Pg 413 # 15 to 26
