BE-1A WEDNESDAY 9-5-07

① Name the property:

a) $a = a$

b) $a \cdot 1 = a$

c) If $x = 4$ then $4x = 4(4) = 16$

d) if $a = b$ then $b = a$

e) $a + 0 = a$

f) if $a = b$ and $b = c$ then $a = c$

g) $a \cdot 0 = 0$

To invert something means to flip it upside down.

The inverse of a fraction is the fraction flipped upside down:

Ex) the inverse of $\frac{2}{3}$ is $\frac{3}{2}$

Ex) the inverse of $2 = \frac{2}{1}$ is $\frac{1}{2}$

Another name for an inverse of a fraction is "Reciprocal"

Multiplicative Inverse Property (MIP) a.k.a. the Reciprocal Property

"Any number times its reciprocal is one."

$$\frac{a}{b} \cdot \frac{b}{a} = \frac{ab}{ab} = 1$$

Ex $\frac{2}{1} \cdot \frac{1}{2} = \frac{2}{2} = 1$

Ex $-\frac{2}{3} \cdot -\frac{3}{2} = \frac{6}{6} = 1$

Commutative Property of Addition and Multiplication

"it doesn't matter what order you add or multiply."

"Commute ⇒ trip to & from school

$a+b = b+a$

Ex $5+2 = 2+5$

Compare with symmetric POE
If $a=b$ then $b=c$

$a \cdot b = b \cdot a$

Ex $5 \cdot 2 = 2 \cdot 5$

Associative Property of Addition and Multiplication

group associates who you hang out with

$$a+(b+c) = (a+b)+c$$

(Ex) $3+(2+4) = (3+2)+4$

$$3\cdot(2\cdot4) = (3\cdot2)\cdot4$$

$$a\cdot(b\cdot c) = (a\cdot b)\cdot c$$

NEITHER THE C.P. for $+$, $\cdot$ or the A.P. for $+$, $\cdot$ work for $-$ or $\div$

Like terms ⇒ same variable, variable has same exponent.

ex) $2x + 5x = 7x$

ex) $2x^2 + 5x^2 = 7x^2$

ex) $2x + 5x^2 = 2x + 5x^2$

ex) $2x + 5y = 2x + 5y$

"COMBINE LIKE TERMS"

means + or −

Never combine numbers and variables

$5 + 3x = 5 + 3x$ NOT $8x$!!!

The "Biggie", the DP...
the Distributive Property

↕

to deal, to pass out

If all you have are numbers, you don't need the DP: $5(2+6)$

$= 5(8) = \boxed{40}$

But suppose the terms in ( ) are not "like" terms, they are in "parentheses jail" - the only way out is the DP

(ex) $5(x+6)$

$\boxed{5x+30}$

"Use the Arrows!

Ex) $3(2x+5)$

Ex) $2(6y+2z)$

Ex) $5(4x-2)$

Ex) $-6(2x+1)$

Summary ⇒ See "memorization" worksheet

HW: • look over Chapters 1-5, 1-6
• memorize the 11 properties