

Math 7H - Unit 1b

Day 1 - Multiplication Properties

Lesson Objectives:

- I can recognize the different multiplication properties.
- I can apply the multiplication properties to evaluate expressions with whole numbers.

Show how you can use the Commutative Property to find each product using mental math.

$$\begin{array}{l}
 5 \times 13 \times 2 \\
 \swarrow \quad \searrow \\
 5 \times 2 \times 13 \\
 10 \times 13 = 130 \\
 6 \times 8 \times \frac{1}{6} \\
 6 \times \frac{1}{6} \times 8 \\
 1 \times 8 = 8
 \end{array}$$

Show how you can use the Associative Property to find each product using mental math.

$$\begin{array}{l}
 9 \times (5 \times 3 \times 2) \\
 9 \times (5 \times 6) \\
 9 \times 30 = 270 \\
 5 \left(\frac{7}{8} \times \frac{2}{5} \right) = \left(\cancel{5} \times \frac{2}{\cancel{5}} \right) \times \frac{7}{8} = \\
 \frac{2}{1} \times \frac{7}{8} = \frac{14}{8} = \frac{7}{4}
 \end{array}$$

* You should write ALL of this in your notes! *

The Commutative Property of Multiplication

Words: Changing the order of factors does not change the product.

Symbols: For any real numbers a and b ,
 $a \times b = b \times a$.

Example: $2 \times 8 = 8 \times 2$

Abbreviation: comm. prop (x)



* You should write ALL of this in your notes! *

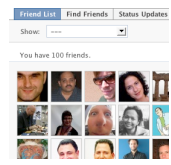
The Associative Property of Multiplication

Words: Changing the grouping of factors does not change the product.

Symbols: For any real numbers a , b , and c ,
 $(ab)c = a(bc)$.

Example: $(3 \times 4) \times 5 = 3 \times (4 \times 5)$

Abbreviation: assoc. prop (x)



* You should write ALL of this in your notes! *

The Multiplicative Identity Property

Words: The product of an factor and one is the factor.

Symbols: For any real number a ,
 $a \times 1 = 1 \times a = a$

Example: $5 \times 1 = 1 \times 5 = 5$

Abbreviation: ident. prop (x)



* You should write ALL of this in your notes! *

The Multiplicative Property of Zero

Words: The product of a factor and zero is zero.

Symbols: For any real number a ,
 $a \times 0 = 0 \times a = 0$

Example: $5 \times 0 = 0 \times 5 = 0$

Abbreviation: multi. prop. 0



<http://home.ubalt.edu/ntsdev/illustrations/ZERO.gif>

Show how you can use the Identity Property or Multiplicative Property of Zero to find each product using mental math.

$$\frac{72}{457} \times 1 = \frac{72}{457}$$

$$13.53218 \times 0 = 0$$

Homework

Multiplication Properties WKS

* Individual Think Time *



What to do if you get stuck...

1. **Reread the problem.** Did you write it down correctly?
2. **Reread your notes.** Is there a problem similar that we did together in class?
3. **Find a problem similar in your book.** Try **this one to see if it helps.**
4. **Skip the problem until the end of Individual Think Time.** Then ask an "educated" question of a neighbor or Mrs. Call.

Today we're working by...



Attachments

ZeroTherapy.ram