## Ch 2.5 Properties of Numbers

Addition Properties:
**Commutative Property of Addition** - allows you to rearrange the order of the numbers to add.
   ex) 15 + 8 + 5 = 15 + 5 + 8

**Associative Property of Additon** - allows you to regroup addition problems.
   ex) [7 + (-4)] +(-6) = 7 + [(-4) + (-6)]

**Identity property of addition** - the sum of a number and zero is the number.
   ex) 0 + (-4) = -4

**Inverse property of addition** - the sum of a number and its opposite equals zero.
   ex) -8 + 8 = 0

Sep 16-8:33 AM

---

State which property was used and then evaluate the expression.

Ex1a) [-25 + 7] + 8 = -25 + [ 7 + 8]

Ex1b) 7 + (-8) + 3 = 7 + 3 + (-8)

Ex1c) [-12 + 9] + (-8) = 9 + [ -12 + (-8)]

Ex1d) -13 + 0 = -13

Ex1e) 5 + (-5) = 0

Sep 16-8:35 AM

---

Properties of Multiplication:
**Commutative property of multiplication**- change the order. 5(3)(-20) =5(-20)(3)

**Associative property of multiplication** - regroup the #'s. 12(5 · 9) = (12 · 5)(9)

**Identity property of multiplication**- × 1. (-3) × 1 = -3

**Inverse property of multiplication** - × by the reciprical. 4 × ¼ = 1

**Multiplication Property of Zero** - × 0 = 0
12 × 0 = 0

**Multiplicative Property of -1** - gives the opposite of the #. 8 × -1 = -8

Sep 16-8:34 AM

---

Ex4) Name the property:
a) 0 x -5 = 0

b) (-2)(-8)(5)=(-2)(5)(-8)

c) ½ x 2 = 1

d) (12 x -6)(-2) = (12)((-6)(-2))

e) 10 x 1 =10

f) -14 x -1 = 14

Sep 16-8:34 AM

---

**Symmetric Property** - if  x = 5, then 5 = x.

**Distributive property**: a(b +c) = ab + ac
         or a(b-c) = ab-ac

Sep 16-8:46 AM

---

## try these

Grade: «grade»
Subject: «subject»
Date: «date»

Sep 16-9:45 AM

1

1   (9 + 7) =(7 + 9)

    A   associative property of addition

    B   commutative property of addition

    C   identity property of multiplication

    D   inverse property of addition

    E   distributive property

Sep 16-9:33 AM

2   -8 x 0 = 0

    A   identity property of multiplication

    B   associative property of multiplication

    C   multiplicative prop of 0

    D   inverse property of multiplication

    E   addition property of 0

Sep 16-9:40 AM

3   3 + (2 + 5) = (3 + 2 ) + 5

    A   symmetric

    B   communitive property of add

    C   communitive prop of multiplication

    D   assoc prop of multiplication

    E   assoc. prop of add.

Sep 16-9:42 AM

4   (-3) + 3 = 0

    A   addition prop of 0

    B   multiplicative property of 0

    C   inverse property of addition

    D   symmetric prop

    E   inverse prop of multiplication

Sep 16-9:44 AM