

Name: Key

4th Grade Notes 2.1A Addition Properties & Subtraction Rules

p. 61

A.) commutative (comm.) property of addition

-numbers can switch places and the sum stays the same
(the sum is the answer to an addition problem)

*this doesn't work for subtraction

*each side has to have the same numbers

Ex: $5+4=9$ > same answer
 $4+5=9$ > when #s switched

B.) associative (assoc.) property of addition

-how numbers are grouped doesn't matter; the sum stays the same

*the numbers stay in the same order; only the parentheses move

*this doesn't work for subtraction

*each side has to have the same numbers

*solve what's in the parentheses first

Ex: $(5+2)+3$ $5+(2+3)$
 $7+3=10$ $5+5=10$ same answer when grouped differently

C.) identity property of addition

-the sum of any number and zero is that number

Ex: $3+0=3$ ^{same} $0+1,495=1,495$ ^{same}

D.) Subtraction (sub.) rules of zero

-a number minus itself equals zero

Ex: $2,000 - 2,000 = 0$
(Arrows point from 2,000 to 2,000 with the word "same" written above them.)

-a number minus zero equals itself

Ex: $500 - 0 = 500$
(Arrows point from 500 to 500 with the word "same" written above them.)

HW Examples:

1.) $19 \oplus 0 = 19$

2.) $19 \ominus 0 = 19$

rule: identity

rule: sub. rule of zero

3.) $(5 + 9) + 2 = 5 + (9 + 2)$
(Arrows show 9 moving from the first parentheses to the second, and 2 moving from the second parentheses to the first.)

rule: assoc. (paren. moved)

4.) $(7 + 6) + 8 = 7 + (6 + 8)$
(Arrows show 6 moving from the first parentheses to the second, and 8 moving from the second parentheses to the first.)

rule: assoc.

5.) $74 + 68 = 68 + 74$

rule: comm. (#s moved)

6.) $7 + 45 + 8 = 45 + 7 + 8$

rule: comm.