January 26, 2016

* Quiz #1 - Tomorrow
  A) CORD 1.1

Jan 26-8:58 AM

$0.\overline{888}$ ← moved three times

① Let $x = 0.8888\ldots$

② $1000 \cdot x = 1000 \cdot 0.8888\ldots$

$1000x = 888.8888\ldots$

③

$$\begin{aligned} 1000x &= 888.8888\ldots \\ -\ x &= 0.8888\ldots \end{aligned}$$

$$999x = 888$$

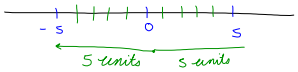
$$x = \frac{888}{999} = \frac{296}{333}$$

Jan 26-9:03 AM

## Absolute Value (abs)

* The Distance of something from zero.
* Distance is always positive.
* $|a| = a$

$|-5| = 5$ & $|5| = 5$




$|x| = x$

$|-y| = y$

Jan 26-9:09 AM

② ① $|11| = (-1) \cdot 11 = -11$

② ① $|-8| = (-1) \cdot 8 = -8$

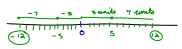
Jan 26-9:14 AM

## Integer Addition

* If the numbers have the same "sign", then add & keep the common sign.

$+5 + 7 = +12 = 12$

$-5 - 7 = (-5) + (-7) = -12$

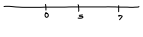



* If the numbers have opposite "signs", then subtract the small abs number from the larger abs and then attach the "sign" of the larger abs number.

$-5 + 7 =$

$|-5|$ $|7|$ $\quad 7 - 5 = +2 =$

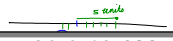
$5 < 7$




$5 + 7 = 5 + (-7)$

$|5|$ $|-7|$ $\quad 7 - 5 =$

$5 < 7$

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## Commutative Tool

* Addition

$a + b = b + a$

$5 + 7 = 7 + 5$

$12 = 12$

* Multiplication

$a * b = b * a$

$ab = ba$

$(5)(7) = (7)(5)$

$35 = 35$

* Subtraction & Division are not not commutative!

However $\begin{cases} 7 - 5 = 2 \\ 5 - 7 = -2 \end{cases}$

$7 - 5 = -5 + 7$

$2 = 2$

$5 - 7 = -7 + 5$

$-2 = -2$

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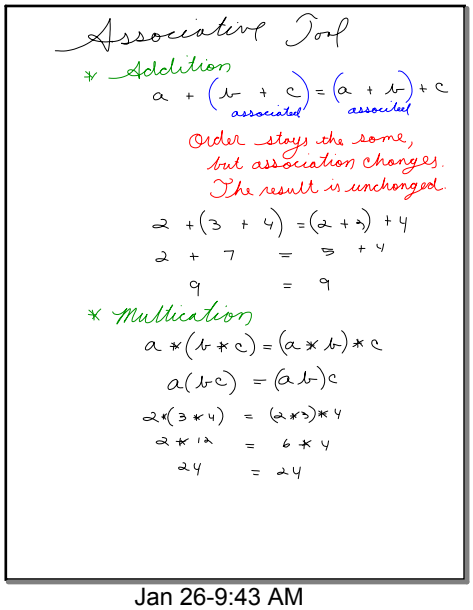
Associative Prop
* Addition
a + (b + c) = (a + b) + c
associated
associated
Order stays the same, but association changes. The result is unchanged.
2 + (3 + 4) = (2 + 3) + 4
2 + 7 = 5 + 4
9 = 9
* Multiplication
a * (b * c) = (a * b) * c
a(bc) = (ab)c
2*(3*4) = (2*3)*4
2*12 = 6*4
24 = 24

Jan 26-9:43 AM