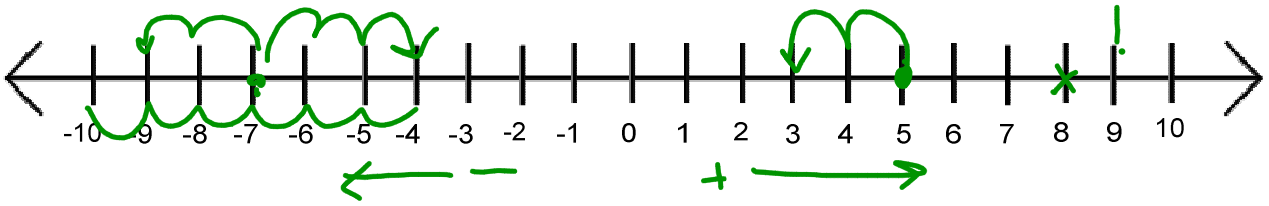
Sept 8, 2016

Unit 1 - Linear Equations

Day 1 - Integers and Order of Operations

Today we will....

1. Review integer operations.
2. Review order of operations (BEDMAS)



Example 1: Find each sum → adding

a) 5 + (- 2) b) 3 + (- 7) c) - 7 + (- 6) d) - 4 + 10

$= 5 - 2$ $= 3 - 7$ $= -4$ $= -7 - 6$ $= -13$ $= 6$

$= 3$

Example 2: Find each difference: – subtracting

a) 15 - 6 b) - 7 - 2 c) 8 - (- 8)

$= 9$ $= -9$ $= 8 + 8$ $= 16$

d) - 2 - (- 11) e) - 7 - (- 3) - 6

$= -2 + 11$ $= -7 + 3 - 6$

$= 9$ $= -4 - 6$

$= -10$

Use your calculator (not your phone!!)

Example 3: Find each product: (mutiply)

a) (-5)(3)

= -15

b) 6(-7)

= -42

c) (-8)(-4)

= 32

d) (-7)(-3)(-5)

= -105

Example 4: Find each quotient: (divide)

a) $(-24) \div 6$

= -4

b) $(-60) \div (-12)$

= 5

c) $26 \div 2$

= 13

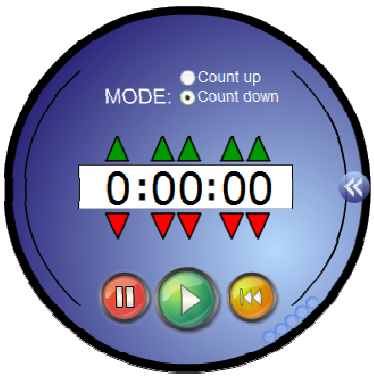
A fun tool to help us remember how to multiply/divide positive and negative integers!

Good Guy/Bad Guy

Good Guy/ Bad Guy	In Town/ Out of Town	Results
+	+	+
+	−	−
−	+	−
−	−	+

Spend 15 minutes getting started on "Why Did The Quiz Show Give Away $10,000 Plus One Banana". You may use your calculator!

If you get done, hand it in. If you do not get done, you will need to finish it for homework and hand it in at the beginning of next class.



Order of Operations

We need to follow the order of operations when we are calculating expressions.

(2)(-3) → multiplication

(1+1)(-3) → evaluate 1+1 first

Brackets → evaluate any operations inside bracket until there is a single number ( ), [ ], < >

Exponents

Division } In order from left to right

Multiplication }

Addition } In order from left to right

Subtraction }

Example 5: Simplify

a) $5 + 27 \div (-9)$

$= 5 + (-3)$

$= 5 - 3$

$= 2$

b) $\frac{1}{2}(8+12) \div 5$

$= \frac{1}{2}(20) \div 5$.

$= 10 \div 5$

$= 2$

c) $(8 - 3) + (1 - 6)$

$= 5 + (-5)$

$= 5 - 5$

$= 0$

d) $(4)(-1) + (7 - 2)$

$= (4)(-1) + (5)$

$= -4 + 5$

$= 1$

y^2 x^3 $\wedge$

e) $3(-2+4)^3 - 2(-4+1)$

$= 3(2)^3 - 2(-3)$

$= 3(2)(2)(2) - 2(-3)$

$= 6(2)(2) - 2(-3)$

$= 12(2) - 2(-3)$

$= 24 - 2(-3)$

$= 24 - (-6)$

$= 24 + 6$

$= 30$

f) $-4(-2)^3 - 3(-4)^2$

$= -4(-8) - 3(16)$

$= 32 - 3(16)$

$= 32 - 48$

$= -16$

To evaluate expressions when specific values are given for the variable:

- Substitute in the value for the variable (always put in brackets)
- Solve using order of operations

Example 6: Evaluate each of the following:

a) xy - 9 when x=2, y=0

$= (2)(0) - 9$

$= 0 - 9$

$= -9$

b) 13p - 7q when p=2, q= -3

$= 13(2) - 7(-3)$

$= 26 - 7(-3)$

$= 26 + 21$

$= 47$

Spend the rest of the class ...

1. Finishing "Why Did The Quiz Show Give Away $10,000 Plus One Banana", if necessary. You may use your calculator!

2. Start work on "Why Should You Look Out For A Pig That Knows Karate?". Be careful if using your calculator. They don't always use the correct order of operations if you don't use brackets!!

If you get done, hand it in. If you do not get done, you will need to finish it for homework and hand it in at the beginning of next class.