

Name \_\_\_\_\_ Period \_\_\_\_\_

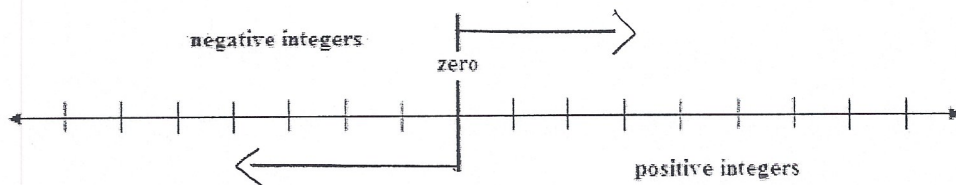
(accel)

So, absolute value gives a positive answer.

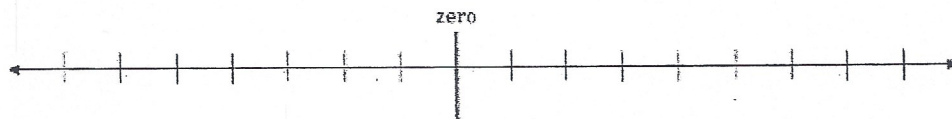


**NOTES: Absolute Value - How far is a number from zero?**

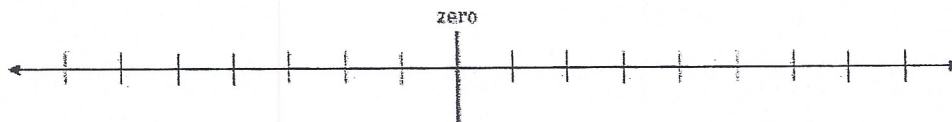
- -The absolute value of a number is its distance from zero on a number line.
- The absolute value of a number is always a positive number (unless the number is 0).
- -The absolute value of a number  $a$  is written as  $|a|$ . This is read, "the absolute value of  $a$ ."
- $|a|$  means take the absolute value of the number inside the symbols. Parentheses ( ) are not the same as absolute value bars.  $(-a) \neq |-a|$



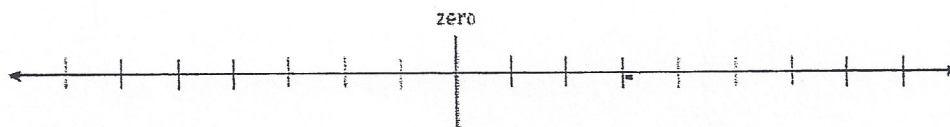
1) On the number line below, name 2 integers that are the same distance from zero. \_\_\_\_\_



2) Graph the absolute value of 2 on the number line.



3) Graph the absolute value of -3 on the number line.



4) Which expression does not belong with the other three?

$|6|$        $6$        $-6$        $|-6|$

5) Is the following statement true or false? \_\_\_\_\_

$|6| = -6$

6) Simplify the expressions.

$(34) =$  \_\_\_\_\_       $|34| =$  \_\_\_\_\_

$(-4) =$  \_\_\_\_\_       $-|4| =$  \_\_\_\_\_

$-(15) =$  \_\_\_\_\_       $-|-15| =$  \_\_\_\_\_

Explain the difference between parentheses and absolute value bars.

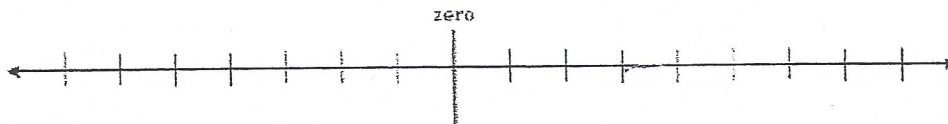
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7) a) Graph and label the following points on the number line:

$A = -3$      $E = 2$      $M = -6$      $T = 0$



What word do the letters spell from least to greatest? \_\_\_\_\_

b) Find the absolute value of each point in part a. When placed in order from least to greatest, what word do the letters spell now? \_\_\_\_\_

8) True or false?

a) The absolute value of every integer is positive. \_\_\_\_\_

b) If  $x < 0$ , then  $|x| = -x$  \_\_\_\_\_

9) Order from least to greatest:

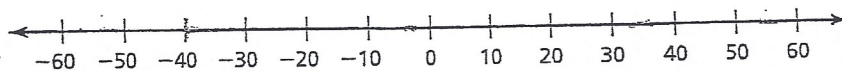
-12     $|-26|$     -15     $|-12|$      $|10|$

10) The freezing point is the temperature at which a liquid becomes a solid.

a) Which substance in the table has the lowest freezing point? \_\_\_\_\_

Substance	Freezing Point ( $^{\circ}\text{C}$ )
Butter	35
Airplane fuel	-53
Honey	-3
Mercury	-39
Candle wax	55

b) Graph each freezing point.



c) Is the freezing point of mercury or butter closer to the freezing point of water,  $0^{\circ}\text{C}$ ? Explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

d) Is the freezing point of airplane fuel or candle wax closer to the freezing point of water? Explain. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

