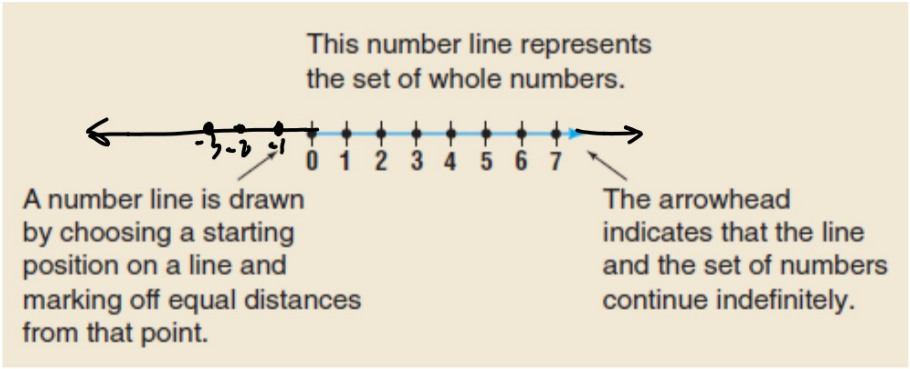
Applied Algebra 2.1

Graph integers on a number line
Compare integers
Order integers

number line
positive number more than 0
zero
negative number less than 0
integer whole + opposite
whole number 0, 1, 2, 3...
natural number
graph
coordinate (x, y)
absolute value |-3| = 3
order of operations G e m A



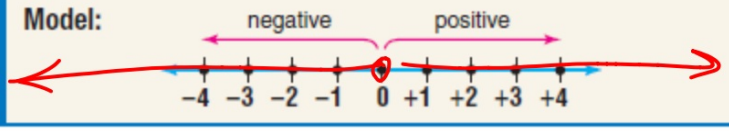
activity: cards compare

Integers

Words: Integers are the negative numbers $-1, -2, -3, -4, \ldots$ and whole numbers $0, 1, 2, 3, 4, \ldots$.

Symbols: $\{\ldots, -4, -3, -2, -1, 0, 1, 2, 3, 4, \ldots\}$

Model:



Zero is neither negative nor positive.

(x, y)

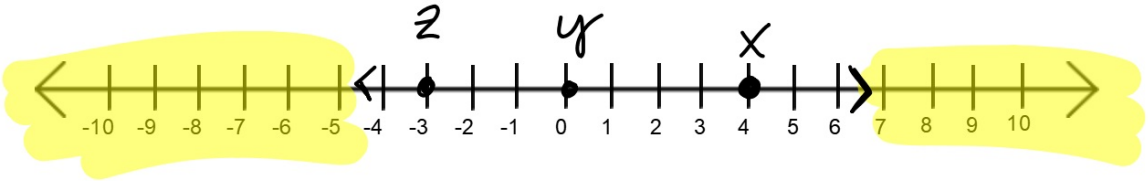
1 Name the coordinates of A, B, and C.

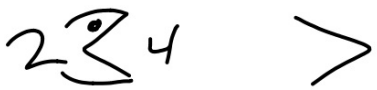
A = −4

B = 2

C = −1

2 Graph points X, Y, and Z on a number line if X has coordinate 4, Y has coordinate 0, and Z has coordinate -3.





< and > demo and stupid Kroon trick

3 $4 > -1$

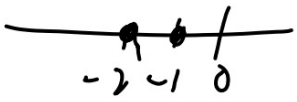
$5 > 3$

4 $-5 < -3$

$\leq$

$>$

$=$



Your Turn

c. $-1 > -2$

d. $2 > -2$

e. $0 < 1$

Absolute Value

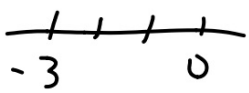
Words: The absolute value of a number is the distance it is from 0 on the number line.

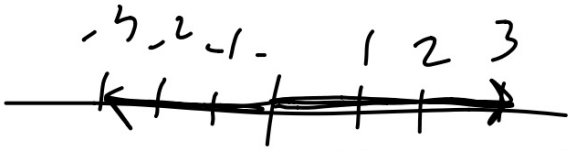
Model:

Numbers: $|-4| = 4, |4| = 4$

$-1 > -3$

$-5 < -3$





Erases negative sign

$|-3| = 3$

$|3| = 3$

Evaluate each expression.

6. $|-3| = 3$

7. $|-5| - |2|$

$5 - 2 = 3$

f. $|9| = 9$

g. $|-2| + |-6|$

$2 + 6 = 8$

h. $|15| - |-4|$

$15 - 4 = 11$

whiteboards

$|-3| + |-5|$

$3 + 5$

8

$|-2| - |-6|$

$2 - 6$

-4

$3 \cdot |-6| + |-2|$

$3 \cdot 6 + 2$

$18 + 2$

$|(4 + -5)|$

$|-1|$

1

$|(3 + -5)| - |-4|$

$-2 \quad +^{-} 4$

$2 \quad +^{-} 4$

-2

$|4| - |-6|$

$4 + 6$

10

$4 \quad + \quad -6$

$= -2$

$|-5| + |-3|$

$|(-2+5)| - |-6|$

$3 - 6$

$|(-4+8)| - |-4|$

$4 - 4$

$$|-5+3| \cdot |-2|$$

$$|-8+-2| \cdot |-6| \qquad |-3 \cdot -2| \cdot |-1|$$

$$|-3| \; ? \; |3|$$

$$3 = 3$$

$|5-8| \; ? \; |-4|$

$|2 \cdot (-3)| \; ? \; |5| - |-3|$