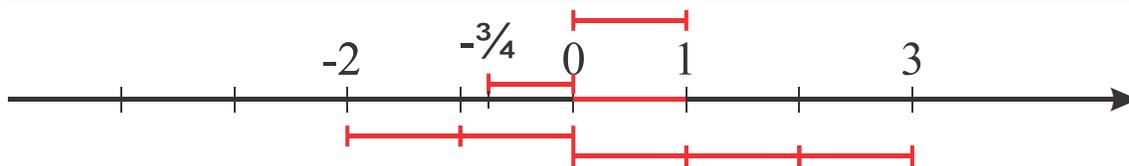


The distance of a number from 0 on the number line is called **the absolute value** of a number. Absolute value of 3 is 3. Absolute value of -3 is 3. The symbol for absolute value is $| \quad |$.

Absolute value is always a positive number.

The formal definition of absolute value of any number is:

$$\begin{cases} |a| = a, & \text{if } a \geq 0 \\ |a| = -a, & \text{if } a < 0 \end{cases}$$



HOMEWORK

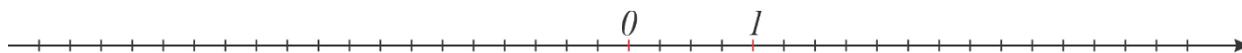
1. What does absolute value of a number represent?

2. What are absolute values of numbers:

Example: $|-7| = 7$

$$|5| = \quad \quad \quad |-5| = \quad \quad \quad |10| = \quad \quad \quad |-10| = \quad \quad \quad \left| \frac{1}{2} \right| = \quad \quad \quad \left| -\frac{1}{2} \right| =$$

3. On the line below, mark the points, corresponding to the numbers which absolute values are 1, 3, $\frac{1}{2}$, 4.



4. Continue numbers on both sides of the sequence by three numbers:

Example: $a. -40, -39, -38, -37, -36, -35, -34, -33, -32$

$a. \dots, -37, -36, -35, \dots$; $b. \dots, 2, 3, 4, 5, \dots$; $c. \dots, -98, -97, -96, \dots$;

5. Evaluate: **Example:** $7 + (-2) = 5$

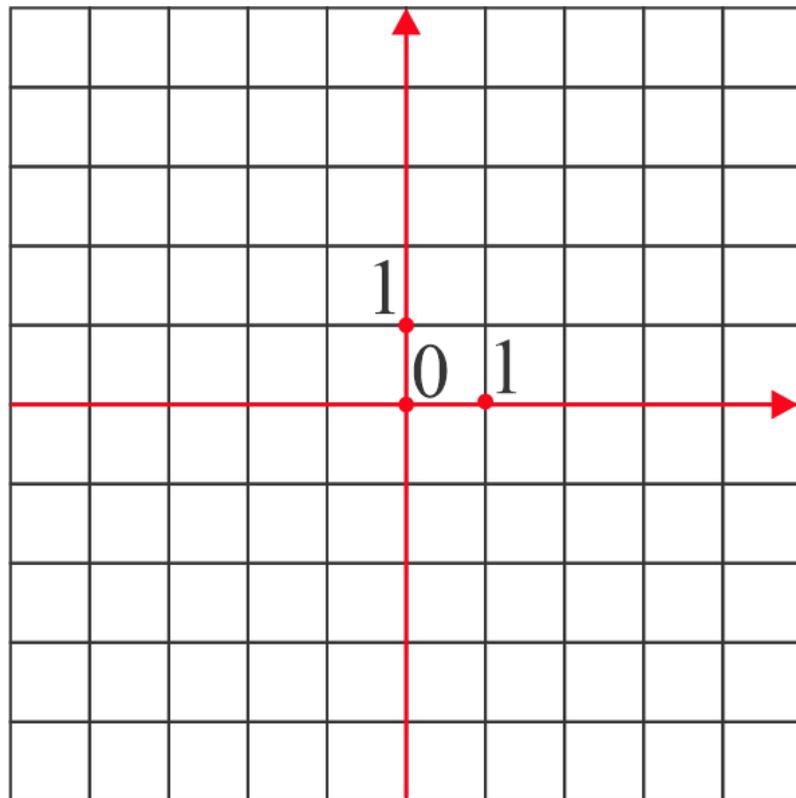
- a. $(-10) + (+11)$; b. $(-7) + (-6)$; c. $(-4) + (+2)$;
d. $(-12) + (+3)$; e. $(-15) + (+18)$; f. $(-11) + (-20)$;
g. $(+20) + (-21)$; h. $(-100) + (-150)$; i. $(-3) + (+4)$;

6. Mary solved three times as many math problems as Peter did. Together they solved 48 problems. How many problems did each of them solved?

7. Draw a shape with vertexes in points with coordinates:

- a. $(-3; 2)$, $(4; 2)$,
 $(4; -2)$,
 $(-3; -2)$

- b. $(-3; 4)$,
 $(4; 1)$,
 $(0; -3)$



8. a) On a separate quad-ruled sheet of paper draw a coordinate plane like the one above. **Use the ruler!** (Quad-ruled paper is attached to the Homework)

b) Using the following coordinates mark the points and connect them:

$(0; -2) \rightarrow (3; -2) \rightarrow (3; 2) \rightarrow (5; 2) \rightarrow (0; 5)$.

c) Can you put 3 more points on the coordinate plane to make the drawing look like a symmetrical house? Write coordinates of those points.