

## Simple equations and inequalities with absolute value

Solve the following equations and inequalities using graphical interpretation of the absolute value of the difference  $|x - a|$ , which means the distance of number  $x$  from the number  $a$  on a number line.

1.  $|x - 1| = 3$

2.  $|x| = 1$

3.  $|x + 2| = 5$

4.  $2|4 - x| - 1 = 0$

5.  $3 - 2|-3 - x| = 0$

6.  $|x - 4| = -5$

7.  $|x - 9| = 0$

8.  $|x| \geq 9$

9.  $|x - 3| > 2$

10.  $|x - 1| < 10$

11.  $|x + 6| \leq 1$

12.  $|x - 7| < \sqrt{3}$

13.  $|x + 4| \geq 2023$