

**Test 2**

Name \_\_\_\_\_

1. Solve the equation  $|x + 3| + |x - 2| = 5$ .

2. Draw the graph of the function  $y = |x + 3| - |x - 2|$

3. What is wrong with the following chain of equalities?

$$\log(x^2 - 6x + 9) = \log(x - 3)^2 = 2\log(x - 3).$$

4. What is wrong in the following solution of the equation  $x = \sqrt{x + 2}$ ?

$$x = \sqrt{x + 2} \iff x^2 = x + 2 \iff x^2 - x - 2 = 0 \iff x = -1 \text{ or } x = 2.$$

How to make it correct?