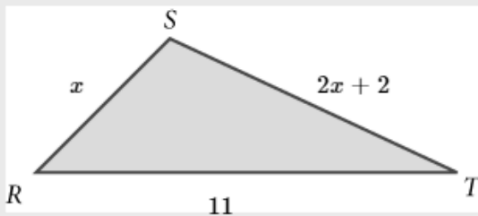
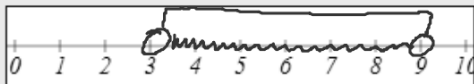


The triangle inequality states that the sum of any two sides of a triangle must be greater than the third side.



Use the three inequalities, which must be true based on the sides of the triangle, to write a compound inequality. Then graph the results.

$$\boxed{3} < x < \boxed{9}$$



$$x + 2x + 2 > 11$$

$$3x > 9$$

$$x > 3$$

$$x + 11 > 2x + 2$$

$$-x \quad -x$$

$$11 > x + 2$$

$$9 > x \Rightarrow x < 9$$

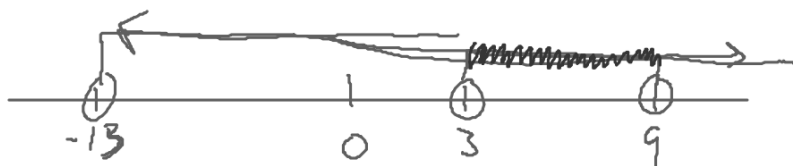
$$2x + 2 + 11 > x$$

$$-x \quad -x$$

$$x + 13 > 0$$

$$x > -13$$

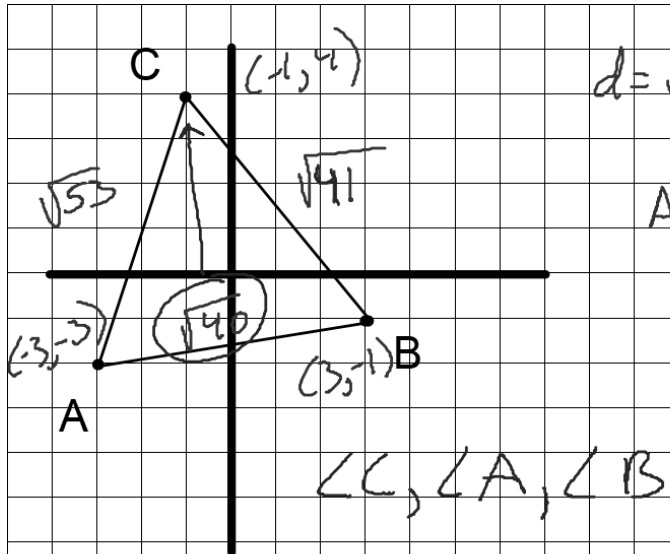
$$3 < x < 9$$



List the angles of $\triangle ABC$ from smallest to largest.

A (-3, -3), B(3, -1), and C (-1, 4)

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$AB = \sqrt{(-3 - 3)^2 + (-3 - (-1))^2}$$

$$= \sqrt{(-6)^2 + (-2)^2}$$

$$= \sqrt{36 + 4}$$

$$= \sqrt{40}$$

$$BC = \sqrt{(3 - (-1))^2 + (-1 - 4)^2}$$

$$\sqrt{(4)^2 + (-5)^2}$$

$$\sqrt{16 + 25}$$

$$\sqrt{41}$$

$$AC = \sqrt{(-3 - (-1))^2 + (-3 - 4)^2}$$

$$\sqrt{(-2)^2 + (-7)^2}$$

$$\sqrt{4 + 49}$$

$$\sqrt{53}$$