

Exercise 15

For the following exercises, solve the equations below and express the answer using set notation.

$$3|5 - x| = 5$$

Solution

Isolate the absolute value term by dividing both sides by 3.

$$|5 - x| = \frac{5}{3}$$

Remove the absolute value sign by placing \pm (read as “plus or minus”) on the right side.

$$5 - x = \pm \frac{5}{3}$$

$$5 - x = \frac{5}{3} \quad \text{or} \quad 5 - x = -\frac{5}{3}$$

$$x = 5 - \frac{5}{3} \quad \text{or} \quad x = 5 + \frac{5}{3}$$

$$x = \frac{10}{3} \quad \text{or} \quad x = \frac{20}{3}$$

Therefore,

$$x = \left\{ \frac{10}{3}, \frac{20}{3} \right\}.$$