Exercise 12

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

$$|5x - 2| = 11$$

Solution

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

$$|5x - 2| = 11$$

$$5x - 2 = \pm 11$$

$$5x - 2 = 11 \quad \text{or} \quad 5x - 2 = -11$$

$$5x = 13 \quad \text{or} \quad 5x = -9$$

$$x = \frac{13}{5} \quad \text{or} \quad x = -\frac{9}{5}$$

Therefore,

$$x = \left\{ -\frac{9}{5}, \frac{13}{5} \right\}.$$