Exercise 10

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

$$|x + 3| = 9$$

Solution

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

$$|x + 3| = 9$$

$$x + 3 = \pm 9$$

$$x + 3 = 9 \quad \text{or} \quad x + 3 = -9$$

$$x = 6 \quad \text{or} \quad x = -12$$

Therefore, $x = \{-12, 6\}$.