

## Exercise 18

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

$$0 = -|x - 3| + 2$$

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### Solution

Isolate the absolute value term. Start by adding  $|x - 3|$  to both sides.

$$|x - 3| = 2$$

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

$$x - 3 = \pm 2$$

$$x - 3 = 2 \quad \text{or} \quad x - 3 = -2$$

$$x = 5 \quad \text{or} \quad x = 1$$

Therefore,

$$x = \{1, 5\}.$$