

Exercise 30

For the following exercises, solve each inequality and write the solution in interval notation.

$$2|v - 7| - 4 \geq 42$$

Solution

Isolate the absolute value term. Add 4 to both sides.

$$2|v - 7| \geq 46$$

Divide both sides by 2.

$$|v - 7| \geq 23$$

Remove the absolute value sign by breaking up the inequality into two; using the logical operators, “and” or “or,” if you have $<$ or $>$, respectively; and solving for x .

$$v - 7 \geq 23 \quad \text{or} \quad v - 7 \leq -23$$

$$v \geq 30 \quad \text{or} \quad v \leq -16$$

Therefore, $v \in (-\infty, -16] \cup [30, \infty)$.