

Exercise A.9.101 Consider  $|2x-1| \leq 1$ .

Express the solution in set notation, interval notation, and graph.

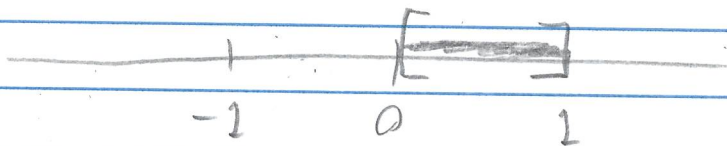
Solution

By Theorem A.9.A,  $|2x-1| \leq 1$  is equivalent to  $-1 \leq 2x-1 \leq 1$  or  $(-1)+1 \leq (2x-1)+1 \leq (1)+1$  or

$$0 \leq 2x \leq 2 \text{ or } 0/2 \leq 2x/2 \leq 2/2$$

or  $0 \leq x \leq 1$ . The solution set

is  $\{x \in \mathbb{R} \mid 0 \leq x \leq 1\}$  or, in interval notation,  $[0, 1]$ . The graph is



□