

Exercise 27

Sketch the graph of f by hand and use your sketch to find the absolute and local maximum and minimum values of f . (Use the graphs and transformations of Sections 1.2 and 1.3.)

$$f(x) = \begin{cases} x^2 & \text{if } -1 \leq x \leq 0 \\ 2 - 3x & \text{if } 0 < x \leq 1 \end{cases}$$

Solution

The function has an absolute minimum and a local minimum:

$$f(0) = (0)^2 = 0 \quad \text{(local minimum)}$$

$$f(1) = 2 - 3(1) = -1 \quad \text{(absolute minimum)}$$

