

Exercise 20

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.)

$$f(x) = \sin x, \quad 0 < x \leq \pi/2$$

Solution

A graph of the function is shown below. Since the interval $0 < x \leq \pi/2$ is closed on the right side, the function has an absolute maximum:

$$f\left(\frac{\pi}{2}\right) = \sin \frac{\pi}{2} = 1.$$

