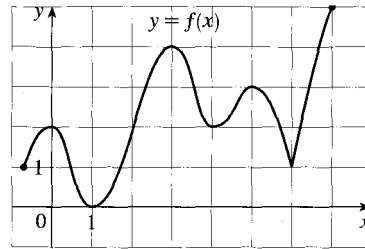


4.1 Exercises

1. Explain the difference between an absolute minimum and a local minimum.
2. Suppose f is a continuous function defined on a closed interval $[a, b]$.
 - (a) What theorem guarantees the existence of an absolute maximum value and an absolute minimum value for f ?
 - (b) What steps would you take to find those maximum and minimum values?

6.



whether the function whose graph is shown has an absolute maximum or minimum, a local maximum or minimum, or neither a maximum nor a minimum.

7-10 □ Sketch the graph of a function f that is continuous on $[0, 3]$ and has the given properties.

7. Absolute maximum at 0, absolute minimum at 2

19. $f(x) = x^2, 0 \leq x < 2$

20. $f(x) = x^2, 0 \leq x \leq 2$

59. $f(x) = \sin x + \cos x, [0, \pi/3]$

60. $f(x) = x - 2 \cos x, [-\pi, \pi]$