

Activity - Extreme Values

Part 1. Consider the function h given by the graph in Figure below. Use the graph to answer each of the following questions.

- (a) Identify all of the values of c for which $h(c)$ is a local maximum of h .
- (b) Identify all of the values of c for which $h(c)$ is a local minimum of h .

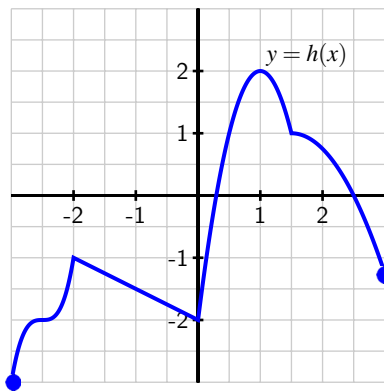


Figure: The graph of a function h on the interval $[-3, 3]$.

- (c) Does h have a global maximum? If so, what is the value of this global maximum?
- (d) Does h have a global minimum? If so, what is its value?
- (e) Identify all values of c for which $h'(c) = 0$.
- (f) Identify all values of c for which $h'(c)$ does not exist.
- (g) True or false: every relative maximum and minimum of h occurs at a point where $h'(c)$ is either zero or does not exist.
- (h) True or false: at every point where $h'(c)$ is zero or does not exist, h has a relative maximum or minimum.

