Exercise 3

Match the graph of each function in (a)–(d) with the graph of its derivative in I–IV. Give reasons for your choices.

(a)

(b)

(c)

(d)

I

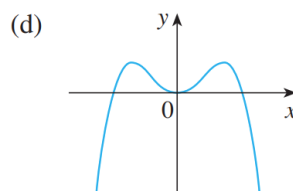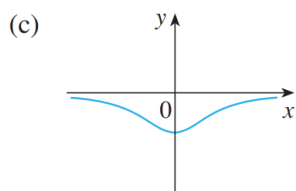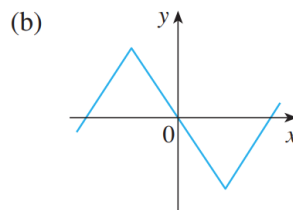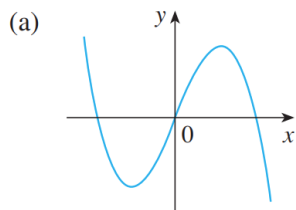II

III

IV
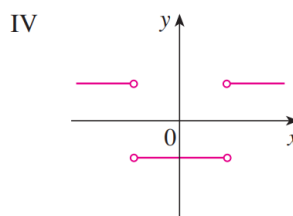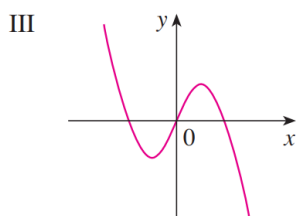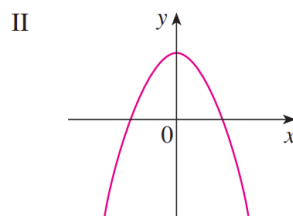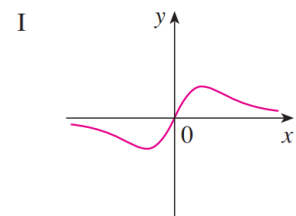
Solution

(a) Graph II, since the function in Graph (a) has a tangent line with zero slope at two locations.

(b) Graph IV; the function in Graph (b) has kinks, leading to discontinuities in the graph of the derivative.

(c) Graph I, since the function in Graph (c) has a tangent line with zero slope at one location.

(d) Graph III, since the function in Graph (d) has a tangent line with zero slope at three locations.