AP CALCULUS AB Dr. Paul L. Bailey

Homework 0423e Thursday, April 23, 2020

Problem 1. Let f be a continuous function defined on [-4, 3] whose graph, consisting of three line segments and a semicircle centered at the origin, is given below.



Let g be the function given by $g(x) = \int_1^x f(t) dt$.

(a) Find the values of g(2) and g(-2).

(b) For each of g'(-3) and g''(-3), find the value or state that it does not exist.

Problem 1 (continued). Let f be a continuous function defined on [-4,3] whose graph, consisting of three line segments and a semicircle centered at the origin, is given below.



Let g be the function given by $g(x) = \int_1^x f(t) dt$.

(c) Find the x-coordinate of each point at which the graph of g has a horizontal tangent line. For each of these points, determine whether g has a relative minimum, relative maximum, or neither a minimum nor a maximum at the point. Justify your answers.

(d) For -4 < x < 3, find all values of x for which the graph of g has a point of inflection. Explain your reasoning.