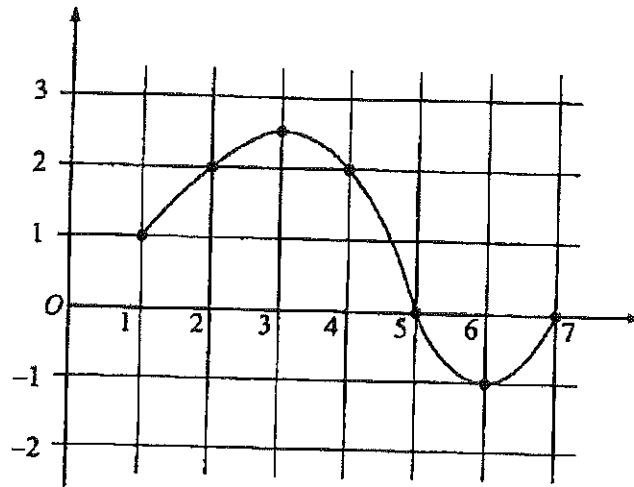


1995 AB6

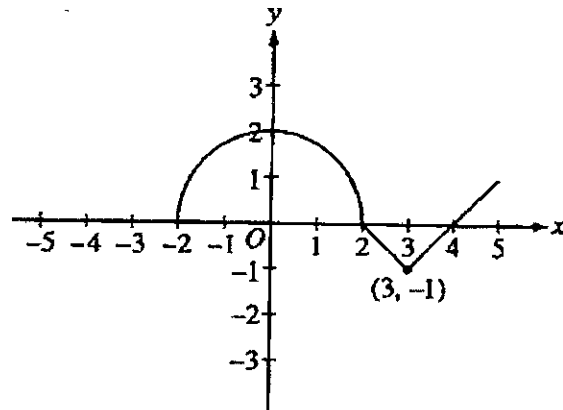


The graph of a differentiable function f on the closed interval $[1, 7]$ is shown above.

Let $h(x) = \int_1^x f(t) dt$ for $1 \leq x \leq 7$.

- (a) Find $h(1)$.
- (b) Find $h'(4)$.
- (c) On what interval or intervals is the graph of h concave upward? Justify your answer.
- (d) Find the value of x at which h has its minimum on the closed interval $[1, 7]$. Justify your answer.

1997 AB5/BC5



The graph of the function f consists of a semicircle and two line segments as shown above. Let g be the function given by $g(x) = \int_0^x f(t) dt$.

- (a) Find $g(3)$.
- (b) Find all the values of x on the open interval $(-2, 5)$ at which g has a relative maximum. Justify your answer.
- (c) Write an equation for the line tangent to the graph of g at $x = 3$.
- (d) Find the x -coordinate of each point of inflection of the graph of g on the open interval $(-2, 5)$. Justify your answer.