

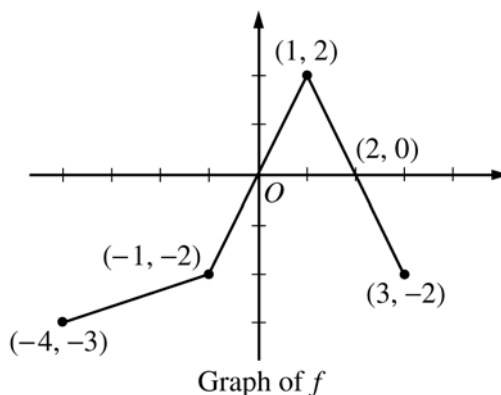
2005 AP[®] CALCULUS AB FREE-RESPONSE QUESTIONS (Form B)

**CALCULUS AB
SECTION II, Part B**

Time—45 minutes

Number of problems—3

No calculator is allowed for these problems.



4. The graph of the function f above consists of three line segments.

- (a) Let g be the function given by $g(x) = \int_{-4}^x f(t) dt$. For each of $g(-1)$, $g'(-1)$, and $g''(-1)$, find the value or state that it does not exist.
- (b) For the function g defined in part (a), find the x -coordinate of each point of inflection of the graph of g on the open interval $-4 < x < 3$. Explain your reasoning.
- (c) Let h be the function given by $h(x) = \int_x^3 f(t) dt$. Find all values of x in the closed interval $-4 \leq x \leq 3$ for which $h(x) = 0$.
- (d) For the function h defined in part (c), find all intervals on which h is decreasing. Explain your reasoning.

WRITE ALL WORK IN THE TEST BOOKLET.