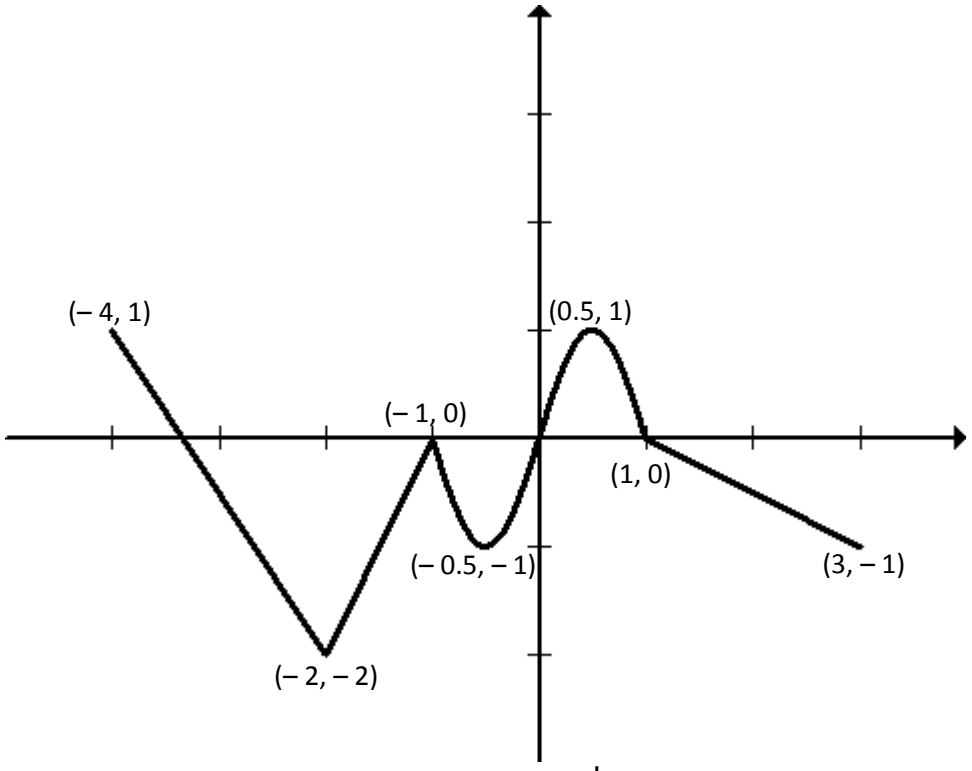
ALLIANCE: Q2

AP CALCULUS AB FREE-RESPONSE QUESTIONS

Time – 20 minutes

QUESTION 2

No calculator is allowed for this problem.




Graph of $f'$

Let $f'$ be the continuous function defined on [-3, 3] whose graph is shown above. The graph consists of three linear segments, with a sinusoidal curve on the interval [-1, 1].

(a) Find the values of $f'(-3)$ and $f''(-3)$.

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

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

(a)

(b)

(c)