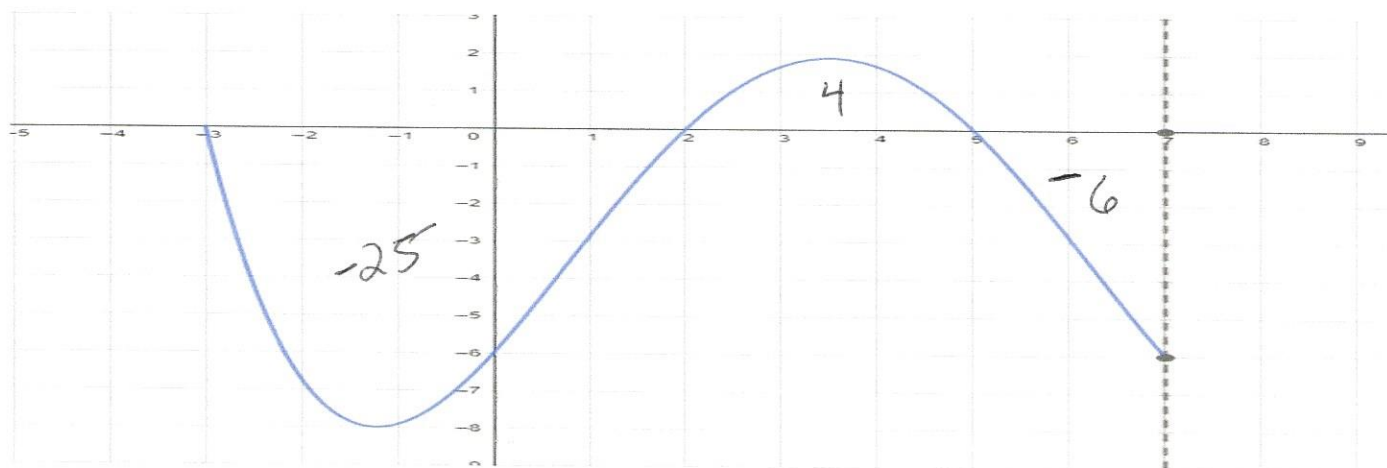


You're not wrong, but neither are you right!

None of the answers given below are wrong, but they need to be improved in order to receive full credit on the AP exam. Determine what needs to be improved.



The graph above shows $f'(x)$, the derivative of the function $f(x)$. The graph of $f'(x)$ has roots located at $x = -3$, $x = 2$ and $x = 5$ and a y -intercept at $(0, -6)$. The area of the regions bounded by the graph of $f'(x)$ and the x -axis on the intervals $[-3, 2]$, $[2, 5]$ and $[5, 7]$ are 25, 4, and 6 respectively. $f(-3) = 10$.

a) For what values of x does $f(x)$ have a relative maximum? Justify your answer.

rel max @ $x = 5$ b/c f' changes signs

b) What is the maximum value of $f(x)$? Justify your answer.

x	$f(x)$
-3	10
5	-11
7	-17

max occurs at $x = -3$

c) Is there a value c in the interval $0 \leq x \leq 2$ such that $f''(c) = 3$?

yes b/c $\frac{f'(2) - f'(0)}{2 - 0} = \frac{0 - (-6)}{2} = \frac{6}{2} = 3$

d) Does $f(x)$ have a point of inflection in the interval $3 \leq x \leq 4$? Justify your answer.

yes b/c f' changes direction in the interval $3 \leq x \leq 4$