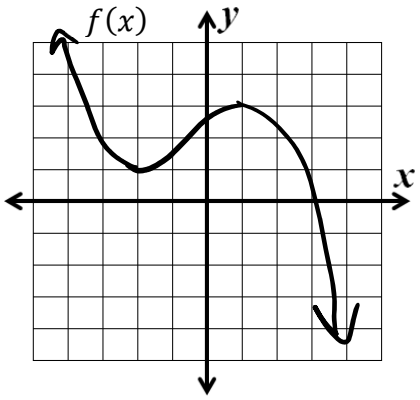
5.8 Sketching Graphs of Derivatives

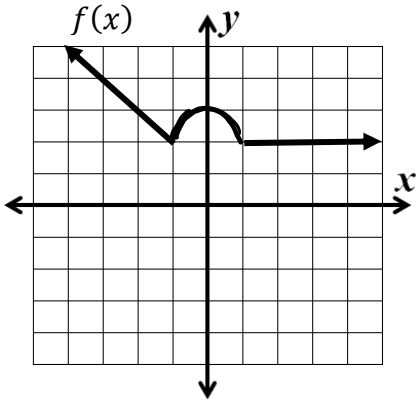
Calculus Name: _____ **CA #2**

The graph of a function f is shown. On the same coordinate plane, sketch a graph of f', the derivative of f.

1.

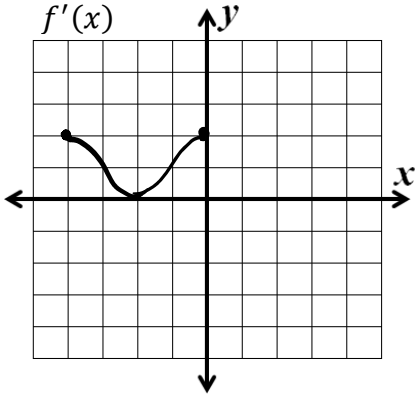


2.

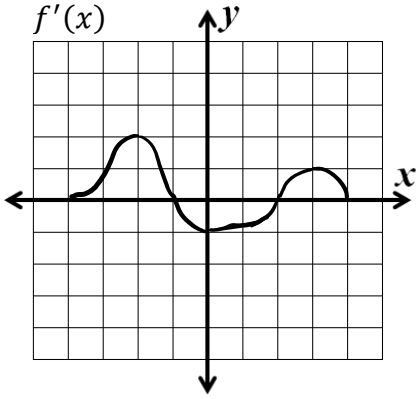


The graph of f', the derivative of f, is shown. On the same coordinate plane, sketch a possible graph of f.

3.

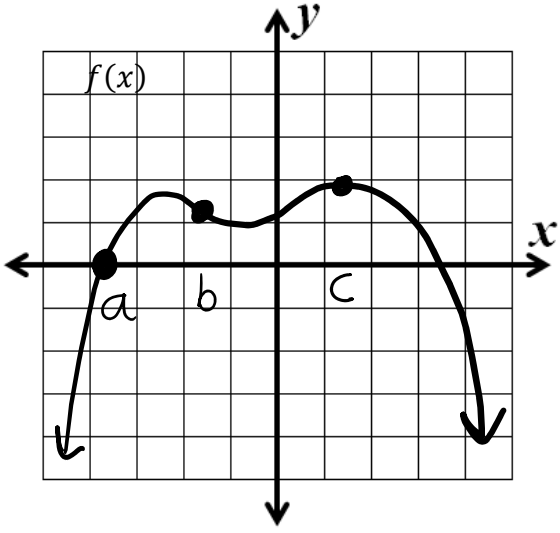


4.



Place the values of $f(x)$, $f'(x)$, and $f''(x)$ in increasing order for each point on the graph of $f(x)$. For these problems, if the point appears to be a max, min, or point of inflection assume it is.

5.

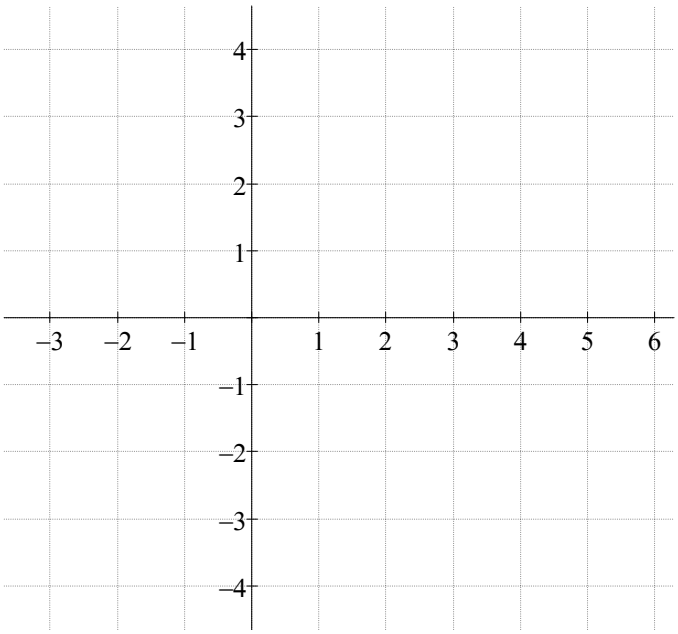


6. Let f be a function that is continuous. The function f and its derivatives have the properties indicated in the table below.

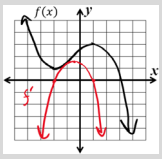
x	$x < 3$	3	$x > 3$
$f(x)$	Pos.	2	Pos.
$f'(x)$	Pos.	Und.	Neg.
$f''(x)$	Pos.	Und.	Pos.

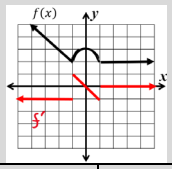
a) Determine the coordinates of the relative maximum. Justify your answer.

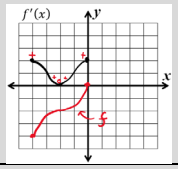
b) Sketch a possible graph of f on the graph below.

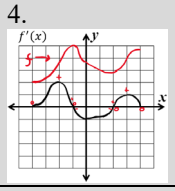


Answers to 5.8 CA #2

1.


2.


3.


4.


5.
$$f''(a) < f(a) < f'(a)$$
$$f'(b) < f''(b) < f(b)$$
$$f''(c) < f'(c) < f(c)$$

6a. Max at $(3, 2)$

6b.