

# Mathematics 122

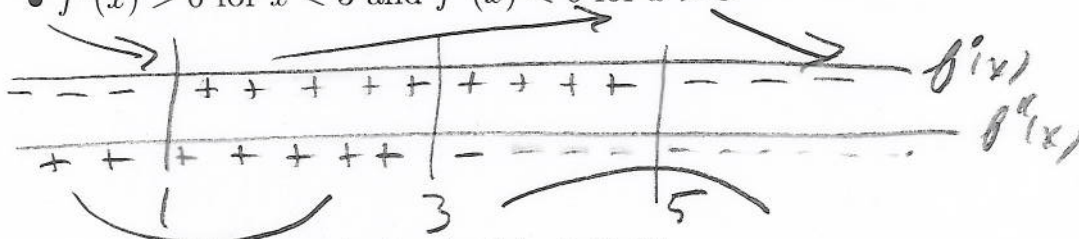
Quiz #25

Name: Key

*You must show your work to get full credit.*

Let  $f(x)$  be a function with

- $f'(x) > 0$  for  $1 < x < 5$  and  $f'(x) < 0$  for  $x < 1$  and  $x > 5$ .
- $f''(x) > 0$  for  $x < 3$  and  $f''(x) < 0$  for  $x > 3$ .



(1) Where are the critical point(s) of  $f(x)$ ?

1 pt

Critical points  $x = 1, 5$

(2) Where are the inflection point(s) of  $f(x)$ ?

1 pt

Inflection points  $x = 3$

(3) For what values of  $x$  is the graph  $y = f(x)$  concave up?

1 pt

$x < 3$   
or  $x \leq 3$

(4) Draw a possible graph for  $y = f(x)$  labeling all local maximums, minimums, and inflection points.

2 pt.

