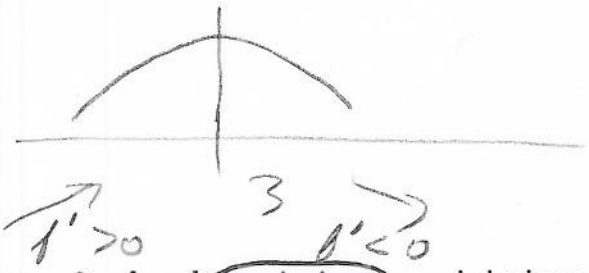
Mathematics 122

Quiz #19 Name: Key

You must show your work to get full credit.

(1) (a) Draw a graph of a function where $f'(x)$ changes from positive to negative at $x = 3$.

1 pt

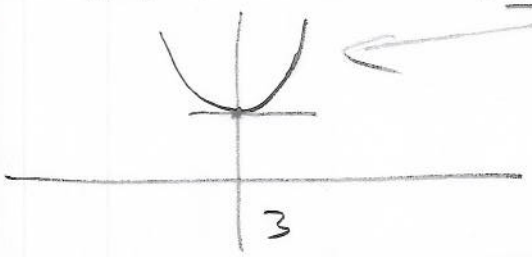


1 pt

(b) Is $x = 3$ a local maximizer or minimizer of $f(x)$? (Circle one.)

(2) (a) Draw a graph of a function with $f'(3) = 0$ and $f''(3) > 0$.

1 pt



1 pt (b) Is $x = 3$ a local maximizer or minimizer of $f(x)$? (Circle one.)

1 pt (3) Let a and b be constants. If $C = \frac{4a}{q^3} - 7b\ln(q) + 9 \cdot 5^q$ what is $\frac{dC}{dq}$?

$C = 4aq^{-3} - 7b\ln(q) + 9(5)^q$ $\quad \frac{dC}{dq} =$ _____

$\frac{dC}{dq} = -12aq^{-4} - \frac{7b}{q} + 9\ln(5)\,5^q$