

Your name: _____

MTH 132-020

Calculus I

F18

Quiz 6

1. Compute the linearization $L(x)$ of the function $f(x) = \frac{1}{(x-1)^3}$ at 0.

2. Suppose $f(2) = 5$ and $f'(2) = 3$. Use linear approximation to estimate $f(2.1)$.

3. Find the absolute maximum value and the absolute minimum value of $f(x) = 12x - x^3$ on the interval $[-1, 3]$.

4. Fill in the blanks:

The Mean Value Theorem Let f be a function defined on the closed interval $[a, b]$. Suppose that

1. f is _____ on the _____ interval _____ and

2. f is differentiable on the _____ interval _____ .

Then there exists a number _____ in _____ such that

$$f'(c) = \underline{\hspace{10em}}$$