

Math 181 Honors Quiz 7 Version A

1. State the definition of $\lim_{x \rightarrow a} f(x) = L$ in terms of ϵ and δ .

2. State the definition of $\lim_{x \rightarrow \infty} f(x) = L$ in terms of ϵ and N .

3. State the definition of $\lim_{x \rightarrow a} f(x) = -\infty$ in terms of M and δ .

4. State the definition of $\lim_{x \rightarrow -\infty} f(x) = \infty$ in terms of M and N .

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5. Let $f(x) = \sqrt{x}$. Use the limit definition of derivative to show that $f'(x) = \frac{1}{2\sqrt{x}}$.

6. Suppose $w(x) = f(x) + g(x)$ where f and g are continuous and differentiable functions. Use the limit definition of derivative to show that $w'(x) = f'(x) + g'(x)$.