

Math 181 Honors Quiz 5 Version A

1. Define in terms of δ and ϵ what it means for a function $f(x)$ to be continuous at c .

2. Prove one of the following:

(i) Suppose both $f(x)$ and $g(x)$ are continuous at c . Show that $w(x) = f(x) + g(x)$ is continuous at c .

(ii) Show that every Cauchy sequence is bounded.

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3. Suppose $x \neq 1$. Sum the series $\sum_{n=5}^{17} x^n$.

4. Determine whether the series

$$\sum_{n=1}^{\infty} \frac{3^n}{n!}$$

converges conditionally, converges absolutely or diverges.