Calculus I, Fall 2014

Quiz 1

Oct 02, 2014

Show all details.

1. Give formal definition of $\lim_{x\to c} f(x) \neq L$ (just the definition, need not find ϵ or δ, etc.).
2. Find $\lim_{\theta\to 0} \dfrac{\sin(\sin\theta)}{\tan 2\theta}$.
3. State the Intermediate Value Theorem (Need not prove). Use it to find a c such that there is a root of "$x - 1 = \cos x$" on $(c, c+1)$.
4. Use the $\epsilon - \delta$ argument to show that if both $f(x)$ and $g(x)$ are continuous at $x = c$, then so is $2f(x) - 3g(x)$.
5. Give formal definitions of the following limits (Just the definition, need not find δ).

$$(a)\ \lim_{x\to c^-} f(x) = L \qquad\qquad (b)\ \lim_{x\to -\infty} f(x) = \infty$$

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