

Quiz 4

Nov 26, 2015

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1. Find $\lim_{x \rightarrow 0} \left(\frac{1}{x} - \frac{1}{\sin x} \right)$.
2. Find the point on $y = \sqrt{x}$, $x \geq 0$ that is closest to $(2, 0)$. Explain why the answer you have is actually a global minimum.
3. Write down Newton's method that can be used to find $\sqrt[3]{2}$. Need not give the numerical value.
4. Express $\int_1^2 \frac{1}{1+x^2} dx$ as a limit of Riemann sum (with uniformly spaced partition and c_k of your choice). Then find the limit of the definite integral using fundamental Theorem of Calculus.
5. Evaluate $\frac{d}{dx} \int_{x^2}^0 \sqrt{1+t^4} dt$.

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