

Quiz 2

Mar 20, 2014

Show all details.

1. Suppose that f is infinitely many times differentiable on R . State Taylor's Theorem for f and write down the formula for $R_n(x)$ (in any form you choose).
2. Find the Taylor series generated by $\sin x$ at $x = 0$. For what values of x does $\sin x$ equal this series? Explain.
3. Find the sum of the series

$$\frac{1}{2} - \frac{1}{8} + \frac{1}{24} - \cdots + (-1)^{n-1} \frac{1}{n2^n} + \cdots$$

4. Let $f(x) = \exp\left(\frac{-1}{x^2}\right)$ for $x \neq 0$ and $f(0) = 0$. Is f differentiable everywhere? Explain.
5. Find the area of the surface generated by evolving $x = \cos t$, $y = 2 + \sin t$, $0 \leq t \leq 2\pi$ about the x -axis.

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