Quiz 2

Oct 20, 2015

Show all details.

1. Evaluate $\dfrac{d^4}{dx^4}\big(x^4\cos(x-1)\big)|_{x=1}$.

2. Find the derivative of $y=\tan(e^{\sqrt{x^2+1}})$. Need not simplify your final expression.

3. Find all roots of $y''=0$ if $y=(1+\frac{1}{x})^3$.

4. Use implicit differentiation (and not other methods) to find dy/dx and d^2y/dx^2 at $(1,1)$ where $y(x)$ is implicitly given by $x^4+y^4=2$.

5. True or False? (prove it if true, correct it if false).

   If f, g and h are differentiable functions on R and $f(g(x))=h(x)$. Let $\frac{d}{dx}f(x)=f_1(x)$, $\frac{d}{dx}g(x)=g_1(x)$, $\frac{d}{dx}h(x)=h_1(x)$. Then $f_1(x)\cdot g_1(x)=h_1(x)$.

Calculus I, Fall 2015

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