

Math151 - Calculus I - Fall 2004

Quiz #2, October 4, 2004

In the following problems you are required to show all your work and provide the necessary explanations everywhere to get the full credit.

1. Find $\lim_{x \rightarrow 0} \frac{2x}{\sin 4x}$.

2. Find $\lim_{x \rightarrow 0} \frac{1 - \cos^2 7x}{1 - \cos^2 11x}$.

3. Let $f(x) = (1 - x \sin x)^2$. Find $f'(x)$.

4. Let $f(x) = \sin^3\left(\frac{1-3x^2}{1+\cos 2x}\right)$. Find $f'(x)$.

5. Find an equation for the tangent line to the curve $y = x^3 - 4$ at the point $(2, 4)$.

6. Find an equation for the tangent line to the curve $x^3 + xy - y^4 = 1$ at the point $(1, 1)$.