

Math 124 Quiz #6
November 4, 2008

Name: _____

Show all work.

1. (5 pts.) Differentiate the following. Do not simplify your answers.

(a) (2 pts.) $y = 6^{\tan x}$

(b) (3 pts.) $f(t) = \sec(\sqrt{t}) + 2t(t^3 + 5)^8$

2. (2 pts.) Evaluate the following limit: $\lim_{x \rightarrow \pi} \frac{\tan x}{2 \sin x}$

3. (3 pts.) Find the equation of the tangent line to the curve $x^3 + \sin y + y = 1$ at the point $(1, 0)$.

Note: Here are **some** derivative rules.

$$\frac{d}{dx}[\sin x] = \cos x \quad \frac{d}{dx}[\cos x] = -\sin x \quad \frac{d}{dx}[\tan x] = \sec^2 x \quad \frac{d}{dx}[\sec x] = \sec x \cdot \tan x \quad \frac{d}{dx}[a^x] = a^x \cdot \ln(a)$$