Quiz 4
Math 251

Name:

Show *all* your work (algebraically or geometrically) for each and simplify. No credit is given without supporting work.

1. [5] Use any results covered in class to find the following:

$$\lim_{x \to 0} \frac{\sin x}{x}$$
$$\lim_{x \to 0} \frac{\sin 3x}{x}$$

$$\frac{d}{dx}\left(\frac{\sin x}{x^2}\right)$$
$$\frac{d}{dx}\left(2^{\sin \pi x}\right)$$

2. [5] . The graph of $\frac{x^2}{9} - \frac{y^2}{4} = 1$ is an example of a hyperbola and is shown below. Find the equation of the line that is tangent to the graph below at $\left(4, \frac{2\sqrt{7}}{3}\right)$.