

11am

## Quiz 4

Fall 2012

Your name: \_\_\_\_\_

Math 0220

Your TA's name: \_\_\_\_\_

No calculators, no notes, no books. Show all your work (no work = no credit). Write neatly. Simplify your answers.

---

1. Evaluate the limits    (a) [3 points]  $\lim_{x \rightarrow -4^+} \frac{x+3}{x+4}$

(b) [3 points]  $\lim_{x \rightarrow \infty} \frac{\sin^2 x}{x^2}$

2. [4 points] Find an equation of the tangent line to the curve  $y = \sqrt{x}$  at the point  $(4, 2)$ .

bonus problem [5 points extra] Using the definition of derivative find the derivative of the function  $f(x) = |x|$  on  $(-\infty, 0) \cup (0, \infty)$ .