12pm

Quiz 7

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.

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1. Find the limit. Use l'Hospital rule if appropriate.

(a) [2 points] $\lim_{t \to 1} \dfrac{\ln t}{\sin \pi t}$.

(b) [3 points] $\lim_{x \to \infty} x \tan(1/x)$.

2. [5 points] Verify that the function $f(x) = \dfrac{x}{x+1}$ satisfies the hypotheses of the MVT on the interval $[0, 3]$. Then find all numbers c that satisfy the conclusion of the MVT.

bonus problem [5 points extra] Evaluate the limit $\lim_{x \to 0} 3(\sin x)^{\tan x}$.