

Lecture time: 12 pm

Quiz 3

Quiz time limit: 20 min.

Spring 2015

Your name: _____

Math 0220

Your TA's name: _____

No calculators, no notes, no books are permitted. L'Hospital's rule is not allowed.

SHOW ALL WORK (no work = no credit). Write neatly. Simplify your answers.

1. For the functions $f(x) = \cos x$ and $g(x) = \sqrt[3]{7 - x^2}$.

(a) [2 points] Find functions $F(x) = f \circ g$ and $G(x) = g \circ f$

(b) [3 points] Find derivatives $F'(x)$ and $G'(x)$. Do not simplify results.

2. [5 points] Find the Slope-Intercept form of the equation of the tangent line to the curve

$y = \frac{2}{x}$ at the point where $x = 1$.

Find the slope of the tangent line as a limit of difference quotient. No credit will be given if you do not use the limit.

bonus problem [5 points extra] $f(x) = \sin^2 x$. Find $f^{(9)}\left(\frac{\pi}{4}\right)$. Simplify your answer.