## Math 130 Day 18

Office Hours (LN 301/301.5): M 3:30-4:30, Tu 11:00-1:00, W 12:15-1:15, F 1:30-2:30. Other times by appointment. Math Intern: Sun through Thurs: 3:00-6:00, 7:00-10:00pm. Website: Use the links at the course homepage on Canvas or go to my course Webpage: http://math.hws.edu/~mitchell/Math130F16/index.html.

## Practice, Practice, Practice Some More

Last time we discussed the product and quotient rules for derivatives. Today we will determine the derivatives of $\sin x$ and $\cos x$ and use these to determine the derivatives of $\tan x$ and $\sec x$.

1. a) Re-read Chapter 3.4, especially the examples using the quotient rule and exponential functions.
b) Now read in Chapter 3.5 on trig derivatives, pages $165-168$. Finally, we will start the Chain Rule on Wednesday. Read Section 3.7.
2. a) Practice page 160: $\# 13,17,19,25$ (write as a quotient), $27,29,33,35,39,41$ (simplify by dividing first), 47,49 (is this really a quotient rule problem?), 57,67 , and 75.
b) Derivatives of trig functions page 169: \#17-27 odd, 57, 59, and 61 .

Day 18 Hand In-Quotient Rule/Trig Practice. Name: $\qquad$
0. Do WeBWork Set Day 18A. Due Thursday night.

1. a) $D_{x}\left(\frac{3 x}{e^{4 x}+2 x}\right)=$
b) $D_{x}\left(2 e^{6 x} \sin x\right)=$
c) Hint: Write as a product. $\frac{d}{d x}\left(\sin ^{2} x\right)=$
2. Basic Trig Derivatives in Combinations with other Rules: Determine
a) $\frac{d}{d x}\left(9 \cos x-8 e^{2 x}\right)=$
b) $\frac{d}{d x}(4 \tan x \sec x)=$
(Simplify Answer)
c) $\frac{d}{d x}\left(\frac{e^{-3 x}+1}{\sin x}\right)=$
d) $\frac{d}{d x}\left(\frac{\tan x}{1+\sec x}\right)=$
