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:

0. Do WeBWorK Set Day 18A. Due Thursday night.

1. a)
$$D_x\left(\frac{3x}{e^{4x}+2x}\right) =$$

(Simplify Answer)

b) $D_x \left(2e^{6x} \sin x \right) =$

c) Hint: Write as a product. $\frac{d}{dx}(\sin^2 x) =$

(Simplify Answer)

2. Basic Trig Derivatives in Combinations with other Rules: Determine

$$\mathbf{a)} \quad \frac{d}{dx}(9\cos x - 8e^{2x}) =$$

b)
$$\frac{d}{dx}(4\tan x \sec x) =$$

(Simplify Answer)

$$\mathbf{c)} \quad \frac{d}{dx} \left(\frac{e^{-3x} + 1}{\sin x} \right) =$$

(Do NOT Simplify Answer)

$$\mathbf{d}) \ \ \frac{d}{dx} \left(\frac{\tan x}{1 + \sec x} \right) =$$

(Simplify Answer a bit)