MATH 205 – Calculus I **SQ 3.7**

Name: _____ Date: _____

1. Fill in the following derivative rules:

$\frac{d}{dx}c =$ $\frac{d}{dx}x =$

$\frac{d}{dx}x^n =$ $\frac{d}{dx}\sqrt{x} =$

$\frac{d}{dx}\frac{1}{x} =$ $\frac{d}{dx}e^x =$

$\frac{d}{dx}\sin x =$ $\frac{d}{dx}\cos x =$

$\frac{d}{dx}\tan x =$ $\frac{d}{dx}\cot x =$

$\frac{d}{dx}\sec x =$ $\frac{d}{dx}\csc x =$

Product Rule: $\frac{d}{dx}f(x)g(x) =$

Quotient Rule: $\frac{d}{dx}\frac{f(x)}{g(x)} =$

Chain Rule: $\frac{d}{dx}f(g(x)) =$

Instructions: Though calculators can be used for the entire daily question, all problems require you to show your work. Any answer without proper justification will receive ***ZERO*** credit. Only **EXACT** answers will receive full credit unless otherwise noted.

2. Determine $f'(x)$ for $f(x) = \sin^3(5x^9 - 7x + \sec x)$

3. Determine $f'(x)$ for $f(x) = \tan\left(\dfrac{8x^3 - 10x^{\frac{5}{9}}}{\csc(e^{5x})}\right)$