Serial No.:_____ Student Name:_____ Student Number: _____

Instructor: M. Z. Abu-Sbeih Math 101- Q4 Date: 15 – 4 – 2014

Problem 1: (7 points) If $y^3+\sin(xy)=0$, find y' at $(1,0)$

Problem 2: (6 points) If $y=\cot^{-1}\sqrt{x^2-1}+\sec^{-1}x$, find $\frac{dy}{dx}$.

Problem 3: (7 points) If $y=(1+\sin x)^x$, find $\frac{dy}{dx}$.

Problem 4: (7 points) If $y=\log_3\frac{x^2e^x}{\sqrt[3]{x+1}}$ find $\frac{dy}{dx}$.

Problem 5: (7 points) If $y=\tan(\cos^{-1}(x^2-1))$ find $\frac{dy}{dx}$.

Problem 6: (6 points) Find the limit if it exists $\lim_{\theta\to\pi/3}\frac{\cos\theta-\left(\frac{1}{2}\right)}{\theta-\pi/3}$