Challenging Problems

Extra Credit

MATH 140 Lab: Section 1

Lab Instructor (TA): Mohammed Kaabar

Student's Name:--

Student's ID:--------------------------

*Note: If you can solve at least one of these problems, I will give you **3 extra points** on the total grade of MATH 140. In addition, if you miss any assignment, this will substitute your assignment that you missed (I will give you 10 out of 10 in the assignment you missed if you can solve one of them correctly)*

Problem 1: Find $\lim\limits_{\Phi \to 0} \left(\Phi^2 \csc^2(\Phi) \right)$.

Problem 2: Find $\lim\limits_{\Omega \to 0} \left(\dfrac{3\Omega^2}{\Omega \sin(\Omega) + \sin(\Omega^2)} \right)$.

Problem 3: Find $\lim\limits_{\vartheta \to 0} \left(\dfrac{\sin(3\vartheta)}{\sin(5\vartheta)} \right)$.