Name: _____
Student ID: _____

Quiz 9

This quiz is graded out of 15 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. *(5 marks)* §8.8 #29
Determine if the improper integral diverges or converges. Evaluate if the integral converges.

$$\int_0^{\infty} \frac{1}{e^x + e^{-x}}\, dx$$

Question 2. *(5 marks)* §8.8 #35
Determine if the improper integral diverges or converges. Evaluate if the integral converges.

$$\int_0^{8} \frac{1}{\sqrt[3]{8-x}}\, dx$$

Question 3. *(5 marks)* §9.1 #64
Determine the convergence or divergence of the sequence with the given n^{th} term. If the sequence converges, find its limit.

$$a_n = n \sin \frac{1}{n}$$