Name: _____
Student ID: _____

Quiz 9

This quiz is graded out of 10 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. *(2 marks)* §8.1 #6 Find a formula for the general term a_n of the sequence, assuming that the pattern of the first few terms continues.

$\{5,1,5,1,5,1,...\}$

Question 2. *(4 marks)* §8.1 #21 Determine whether the sequence converges or diverges. If it converges, find the limit.

$$a_n = \frac{\cos^2 n}{2^n}$$

Question 3. *(4 marks)* §8.1 #19 Determine whether the sequence converges or diverges. If it converges, find the limit.

$\{n^2 e^{-n}\}$

Question 4. *(5 marks)* Set up the integral to find the volume of the solid obtained from the region bounded by the graphs of $x = y^2 - 2y$, $x = y$ rotated about the line $x = -1$.