Last Name: _____

First Name: _____

Student ID: _____

Quiz/Assignment 9

Question 1. *(5 marks)* Evaluate the following limit:

$$\lim_{x \to 0^+} (\cos x)^{1/x^2}$$

Question 2. Evaluate the following:

(a) *(5 marks)*

$$\int_0^2 \frac{dx}{\sqrt{1 - x^2}}$$

(b) *(5 marks)*

$$\int_{-1}^1 \frac{e^x}{e^x - 1} \, dx$$

(c) *(5 marks)*

$$\int_0^2 z^2 \ln z \, dz$$

Question 3.

(a) *(5 marks)* Find the area bound by the curves $y = \sin x$ and $y = e^x$ and the lines $x = 0$ and $x = \pi/2$.

(b) *(5 marks)* Find the area bounded by the curves $x = 2y^2$ and $x = 4 + y^2$.