Name: _____

Student ID: _____

Quiz 4

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. *(3 marks)* §5.4 #9 Find the derivative of the function.

$$h(x) = \int_2^{1/x} \arctan t \; dt$$

Question 2. *(2 marks)* §5.4 #18 Find the average value of the function on the given interval.

$$f(\theta) = \sec \theta \tan \theta \quad [0, \pi/4]$$

Question 3. *(2 marks)* §5.5 #47 Evaluate the definite integral.

$$\int_{-\pi/6}^{\pi/6} \tan^3 \theta \; d\theta$$

Question 4. *(3 marks)* §5.5 #62 If f is continuous and $\int_0^9 f(x) \, dx = 4$, find $\int_0^3 x f(x^2) \, dx$