Name: _____

Student ID: _____

Quiz 10

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. *(5 marks)* §7.4 #6 Find the length of the curve: $y = \frac{x^2}{2} - \frac{\ln x}{4}$, $2 \leq x \leq 4$.

Question 2. *(5 marks)* A tank has a $12m$ diameter on top, its shape is defined by revolving $y = \frac{x^2}{9}$ about the y-axis. Set up the integral to find the work required to fill the tank of a liquid with an arbitrary density ρ from a pump $7m$ below the tank.