

Math 125

Quiz 6 (20 minutes)

Name _____

Student number _____

Quiz section: _____

This is a closed book and notes quiz, and no calculators can be used. There are three problems in this quiz (the other one is on the back of this page), total of 20 points. Write legibly and show your work fully.

1. (6 points) Find the length of the curve: $y = \ln(3 \sec x)$ for $0 \leq x \leq \pi/6$.

2. (4 points) Show that every member of the family of functions $y = ce^{x^4/4}$ is a solution of the differential equation $y' = x^3y$.

3. (10 points) Find the centroid of the region bounded by the curves

$$y = \sqrt{3} \sin x, \quad y = \cos x, \quad x = 0 \quad \text{and} \quad x = \pi/6.$$