

Math 152 Quiz #9
March 9, 2010

Name: _____

Show all work on a separate sheet. Put a box around your final answer. No calculators are permitted.

1. Evaluate the following integrals. State whether it is convergent or divergent.

(a) (2 pts.) $\int_0^{\infty} x^2 e^{-x^3} dx.$

(b) (2 pts.) $\int_0^1 x \ln x dx$

2. (3 pts.) Set up, but DO NOT EVALUATE, an integral to find the arc length of the curve $y = \sin^3(4x)$ from the points $(0, 0)$ to $(\frac{\pi}{8}, 1)$.
3. (2 pts.) Convert the polar point $(-6, \frac{2\pi}{3})$ into rectangular coordinates.