

MATH 152
Mrs. Bonny Tighe

QUIZ 6
8.8, 9.1, 9.2
25 points

NAME _____
SECTION _____ *Wed 10/17/05*
~~Tues. 3/29/05~~

1. Determine whether each integral is convergent or divergent. Evaluate those that are convergent.

a) $\int_1^{\infty} \frac{x+1}{x^2+2x} dx$

b) $\int_0^5 \frac{\ln x}{x} dx$

c) $\int_{-\infty}^1 xe^{x^2} dx$

d) $\int_1^3 \frac{1}{y-1} dy$

e) $\int_{-1}^i \frac{e^m}{e^m - 1} dm$

2. Find the length of the curve on the given interval:

a) $y^2 = 4x$, $0 \leq y \leq 2$

b) $y = \ln(\sec x)$, $0 \leq x \leq \frac{\pi}{4}$

3. a) Find the area of the surface obtained by rotating the curve about the y-axis.

$$y = \sqrt[3]{x}, \quad 1 \leq y \leq 2$$

b) Find the surface area obtained by rotation of the curve about the x-axis

$$y = \sqrt{x}, \quad 4 \leq x \leq 9$$