MA 126-6A Spring 2003 Test 2
Name _____

1. Determine whether or not

$$\int_2^\infty \frac{1}{x^2+6x+8}dx$$

converges.

2. The base of a solid is the triangle having vertices $(1,1)$, $(1,4)$ and $(4,1)$. Each cross section perpendicular to the $x-$ axis is a triangle whose height above the $x,y-$ plane is three times as long as its base in the $x,y-$ plane. Find the volume of the solid.

3. Find the area bounded by the curves $y = \sin(x)$ and $y = \cos(x)$ for $0 \leq x \leq 2\pi$.

4. Find the length of the curve given parametrically by

$$x = 4[\cos(t) + t\sin(t)], y = 4[\sin(t) - t\cos(t)],$$

for $0 \leq t \leq 3\pi/2$.

5. Evaluate

$$\int_0^{\pi/4} \sin^4(x)dx.$$