ING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF MATHEMATICAL SCIENCES
MATH 201-11
Quiz # 2
October 3, 2007

NAME:	ID#:

SHOW ALL YOUR WORK

1. **(3points)** Change the polar equation $r^2 \sin 2\theta = 1$ into rectangular coordinates and sketch the resulting equation.

2. **(4points)** Set up an integrarl to compute the area inside the Cardioid $r = 1 + \cos\theta$ but outside the circle $r = \sin\theta$.

3. **(3points)** Find the equation of the sphere whose center is at the point $(1, 2, 3)$ and touches the xy-plane.