# ING FAHD UNIVERSITY OF PETROLEUM AND MINERALS DEPARTMENT OF MATHEMATICS \& STATISTICS <br> MATH 201-04 <br> Quiz \# 2 <br> March 17, 2010 

NAME: $\quad$ ID\#:

## SHOW ALL YOUR WORK

1. (3points) Find all points of intersection of the polar curves $r=3 \cos \theta$ and $r=$ $1+\cos \theta$.
2. (3points) Find the equation of the sphere with center at $(1,2,-4)$ and touches the $x y$-plane.
3. (4points) Find the length of the polar curve $r=\sin ^{2}(\theta / 2)$ from $\theta=0$ to $\theta=\pi$.
