KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
MATH 201-06
Quiz # 2
Oct 20, 2010

NAME:	ID#:

SHOW ALL YOUR WORK

1. **(4points)** Find the area enclosed by the curve $r = 2 - \sin\theta$.

2. **(3points)** Describe in words, or sketch the region in $\mathbb{R}^3$ represented by the inequality $x^2 + y^2 + z^2 < 2y$.

3. **(3points)** For the vectors $\mathbf{a} = \langle 5, -1, 4\rangle$ and $\mathbf{b} = \langle -2, 3, 6\rangle$ find the vector w which represents the projection of $\mathbf{a}$ onto $\mathbf{b}$. Show that $\mathbf{a} - \mathbf{w}$ is orthogonal to $\mathbf{a}$.