KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
MATH 201-02
Quiz # 2
Feb 20, 2014

NAME:	ID#:

SHOW ALL YOUR WORK

1. **(4points)** Set up the integral to calculate the area outside the circle $r = 3\cos\theta$ and inside the cardioid $r = 1 + \cos\theta$. Do not perform the integration.

2. **(3points)** Find the slope of the three-leaved rose $r = \cos 3\theta$ at $\theta = \frac{\pi}{6}$.

3. **(3points)** Find lenght of the cardioid $r = 1 + \cos\theta$.