King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 201 - Quiz 2

Name:
Student ID #:

Question 1. Sketch the curve $r^2 - \tan^2\theta = 1$ by first finding its Cartesian equation.

QUESTION 2 IS ON THE BACK OF THE PAGE.

Question 2. Consider the circles $r = 2\sin\theta$ and $r = 1$.

(1) Find the intersection points of the circles and sketch them on the same polar coordinate system.

(2) Setup but do not evaluate an integral to calculate the length of the arc of the circle $r = 2\sin\theta$ contained in $r = 1$.

(3) Setup but do not evaluate an integral to calculate the area of the region inside the circle $r = 2\sin\theta$ and outside the circle $r = 1$.