

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

Name:

Student ID #:

**Question 1.** Sketch the curve  $r^2 \cos(2\theta) = 2$  by finding its Cartesian equation.

**Question 2.** Setup but do not evaluate an integral that calculates the length of one leaf of the four-leaved rose  $r = \sin(2\theta)$ .

**QUESTIONS 3 IS ON THE BACK OF THE PAGE.**

**Question 3.** Setup but do not evaluate an integral that calculates the area enclosed by the inner loop in the sketch of the curve  $r = \frac{1}{2} + \sin(\theta)$ .