

MATH 166
SUMMER 2012
QUIZ 28

1. Consider the polar equation $r = 1 + 2 \sin(\theta)$.
 - a) (5 pt) Sketch the polar curve $r = 1 + 2 \sin(\theta)$.
 - b) (5 pt) Find the area enclosed by the inner loop of this curve.

2. Consider the polar equation $r = 2 + \sin(\theta)$.
 - a) (5 pt) Find the total area enclosed by this curve.
 - b) (5 pt) Find $\frac{dy}{dx}$.
 - c) (5 pt) Find all places on the cardioid where the tangent line is horizontal.
 - d) (5 pt) Find all places on the cardioid where the tangent line is vertical.