

Ma1023 Quiz 3

## Calculus III

A Term, 2013

1. (5 pts) Sketch the graph of  $r(\theta) = 1 - 2\cos(\theta)$  in the  $\theta r$  plane.

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Sketch as well the graph of  $r(\theta) = 1 - 2\cos(\theta)$  in the xy plane.

Label clearly all interesting features of the graphs.



[Thanks Jesse Earisman]

2. (2 pts) What is the slope of the tangent line to the curve in the xy plane at  $\theta = \pi/2$ . [Note dy/dx is the slope in the xy plane.  $dr/d\theta$  is the slope in the  $\theta$  r plane.]

3. (3 pts) Write down, but do not compute, a definite integral which gives the area enclosed by the polar graph in problem 1. (No area counted twice.)



[Thanks Taryn Loomis]