Problem Set 4   Calculus 2   Due 3/30/11

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 3 points for correct and clearly justified answers. An additional quality point will be awarded to submissions which are presented in a manner appropriate to good college-level work.

1. Do #16 in §10.4.

2. a) Find the first three points with $\theta \geq 0$ where the spiral $r = 2\theta$ has a horizontal tangent line.

    b) Find the first three points with $\theta \geq 0$ where the spiral $r = 2\theta$ has a vertical tangent line.

3. Find the area of the region bounded by the lemniscate $r^2 = 6 \sin 2\theta$.