MATH 330 · Calculus III
Autumn 2016

Homework 7: Due in class November 30

Reminder

Your submitted homework solutions should show not only your answers, but should show a clearly reasoned logical argument, written using **complete English sentences**, leading to that solution. Each mathematical symbol that you will encounter stands for one or more English words[1], and if you elect to use symbols, you must use them properly. In particular, please avoid the use of the "running equals sign", as this is an abuse of notation and is unacceptable: `http://www.wikiwand.com/en/Equals_sign#/Incorrect_usage`. Write your solutions so that a student one course behind you in the sequence would understand them.

Problem 1. These problems are about finding the areas inside and between polar curves.

    (a) [**10 points**] Find the area inside the leminiscate $r^2 = 6\cos(2\theta)$ and outside the circle $r = \sqrt{3}$.

    (b) [**10 points**] Find the area inside the six-leaved rose $r^2 = 2\sin(3\theta)$.

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[1]See a list of mathematical symbols and their meanings here: `http://en.wikipedia.org/wiki/List_of_mathematical_symbols`