MATH 574
Homework 2
Due Tuesday February 13

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"Pure Mathematics do remedy and cure many defects in the wit."

Francis Bacon

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From page 140-145 of the textbook, please do:

Problem 4.1.1

Problem 4.2.1: (For this problem, we did not discuss the phase portrait for one-dimensional systems, so you may skip part (b). However, if you read this material in the text on your own and complete part (b), I will give extra credit.)

Problem 4.3.2; parts (a), (b), and (c). (In this problem you may substitute a computer drawn plot for the hand drawn plot in part (c) if you wish.)

Problem 4.4.2

Problem 4.5.3: (Note, in part (c) of this problem the "basin of attraction" for the fixed point (x^*, y^*) simply means the set of all initial conditions (x_0, y_0) such that the solution with those initial conditions tends toward the fixed point (x^*, y^*) as t tends toward infinity.)

From page 180 in the textbook please do Problem 5.3.2; parts (a), (b) and (c). As in Problem 4.3.2 you may substitute a computer drawn phase portrait for the hand drawn phase portrait in part (c)