Mathematics 4348   **Test 1**   25 January 2000

NAME:_____

Instructions: Write the answers where indicated (or points will be taken off). You may attach worksheets if they are likely to be helpful: Some credit may be given for a correct method, if it is clearly explained and convincing.

The first problem is to be done as a take-home problem. You may use your notes, the on-line text, other texts, integral tables, or software, if you desire. You may not consult other people.

Please write your answers where indicated.

1. Solve the following integral equation, which has a separable kernel:

$$y(x) = \int_0^1 \left(x\cos(t) + 1 - t\cos(x)\right) y(t)\, dt + 3x - 3x^2$$

Note: *Please* don't spend hours doing the integrals. Use software or integral tables.

ANSWER:

y(x) = _____

SHOW WORK BELOW (ATTACH SHEETS AS NECESSARY)