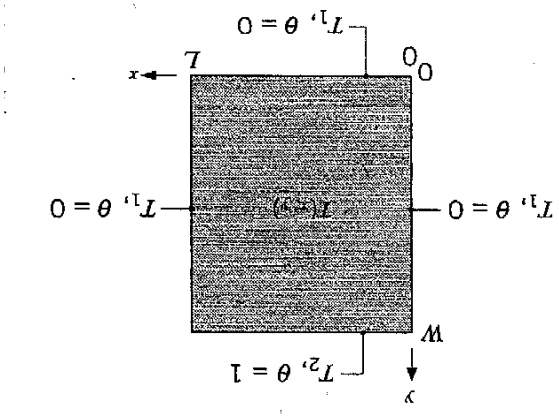
ChEg 356
Spring 2005
HW #5

1. Consider steady-state heat conduction on a rectangular plate which has a length, L in the x direction, a width W in the y direction and infinite in the z direction. Envision the picture below, but flip it right-side up



θ = dimensionless temperature, (T-T0)/(T1-T0). This is held at 0 on three of the boundaries, but is 1 on the 4th boundary. Find the solution for temperature profiles. You can give this for just θ. I would suggest using separation of variables although there are other methods.

2. Find the solution for example 12.1-2, if the initial temperature is given as Cos (3/2 π η) on the domain (-1,1). Plot the temperature profiles showing the relaxation to a constant temperature.

3. 12.B.7

4. There will be another