ME323, April 15, 2008 Quiz 1

Name: ______

1. For the 1-D plane wall shown in the figure, assume the thermal conductivity is k, write down Fourier's Law in one dimensional form.

 $q_x^{"}$

2. For the 1-D plane wall shown in the figure, write down heat equation for 1-D, steadystate conduction with constant thermal conductivity k and no heat generation.

3. For the one dimensional plane wall shown below, the thickness of the wall is L, the temperature on the two sides of the wall is T_1 and T_2 respectively. Solve for the temperature distribution T(x) in the wall. Assume that the thermal conductivity *k* is constant and there is no heat generation.

