LAB #9

Development of four node isoparametric element for heat transfer problems.

Prob. Consider the heat conduction problem depicted in figure 1. The coordinates are given in meters. The conductivity is isotropic, with D=k [1 0; 0 1], and k= 5W/ °C. The temperature T=0 is prescribed along edges AB and AD. The heat fluxes q=0 and q=20W/m are prescribed on edges BC and CD, respectively. A constant heat source Q=6 W/m^2 is applied over the plate. Model the problem with 16 quadrilateral finite elements and plot the temperature distribution in 16-element mesh.

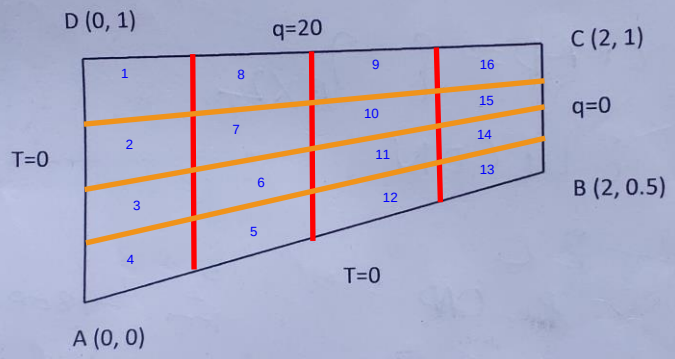

figure:1