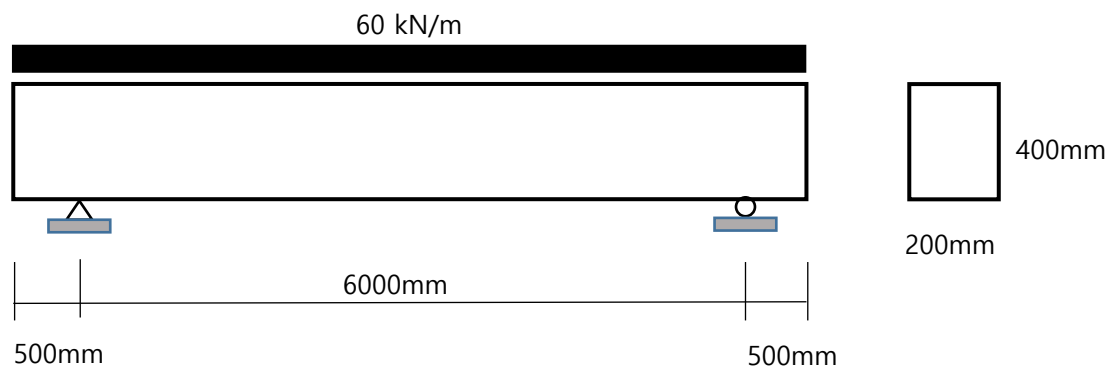**Project I**   Due May 2   Finite Element Implementation

1. Modify program EX981 to accommodate the 4 node rectangular element with distributed loading and weight.

2. Perform numerical analysis for the following beam. Show the FE analysis results.

3. Compare the results with the results from the beam theory: deflection, and the magnitudes of normal stress and shearing stress.

60 kN/m

400mm

200mm

6000mm

500mm   500mm

E= 2000 MPa   Poisson ratio= 0.3   density= 200kN/m3

Project II   Due June 1

1. Modify the program of project I to accommodate the 4 node quadrilateral (irregular) element using isoparametric formulation.

2. Perform numerical analysis for the same beam. But, in the modeling, use irregular element shape instead of rectangular elements.

3. Compare and discuss the results of projects I and II.