Lab – 5

Beam problems: Generation of global stiffness matrix and load vector for a beam of length "L" and having a constant width $b = 40\ mm$ using numerical integration. Find the solution for deflection at point 'B' and maximum stress (σ_x) at section 'A' using 1, 2, 4, and 6 elements. Plot the results against the number of elements. Solve the problem for two sets of BCs:

a) Cantilever
b) Fixed-pinned

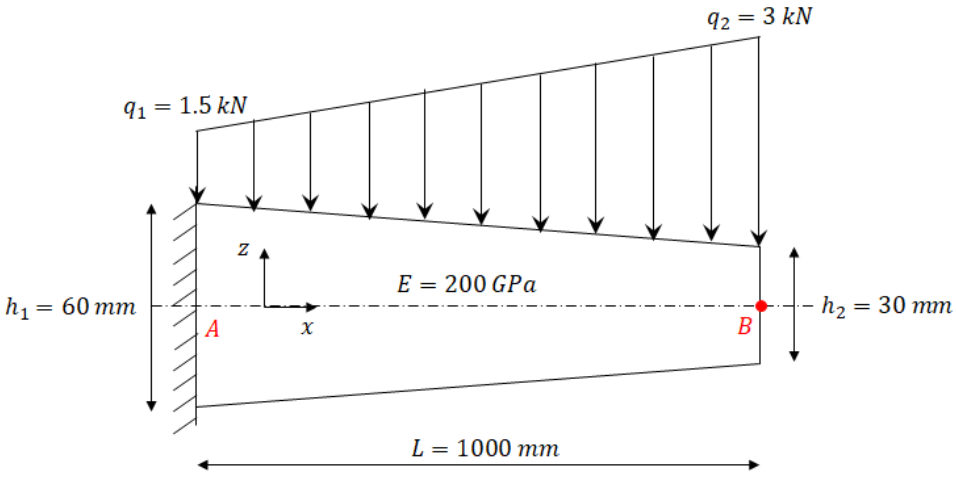

Figure (a)

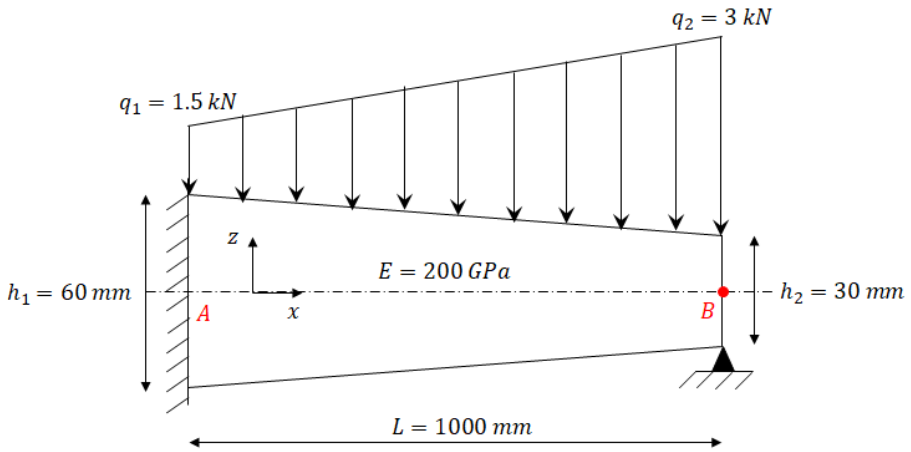

Figure (b)