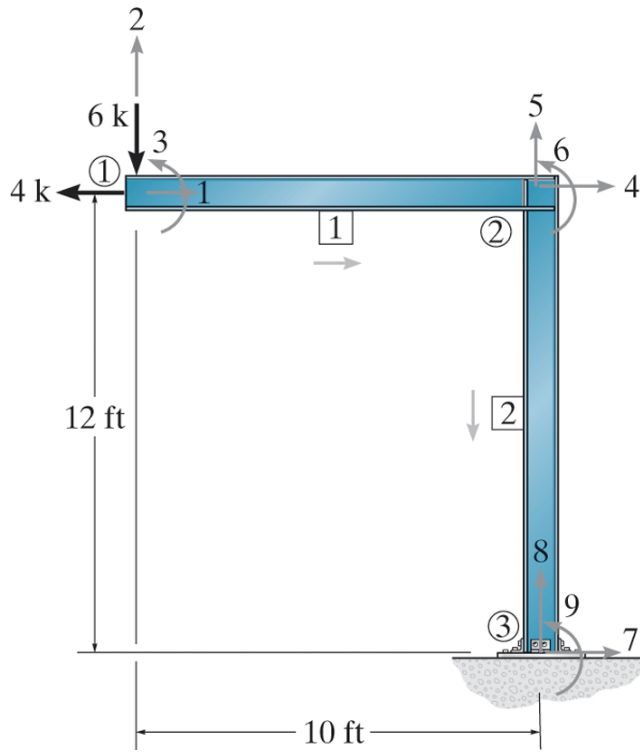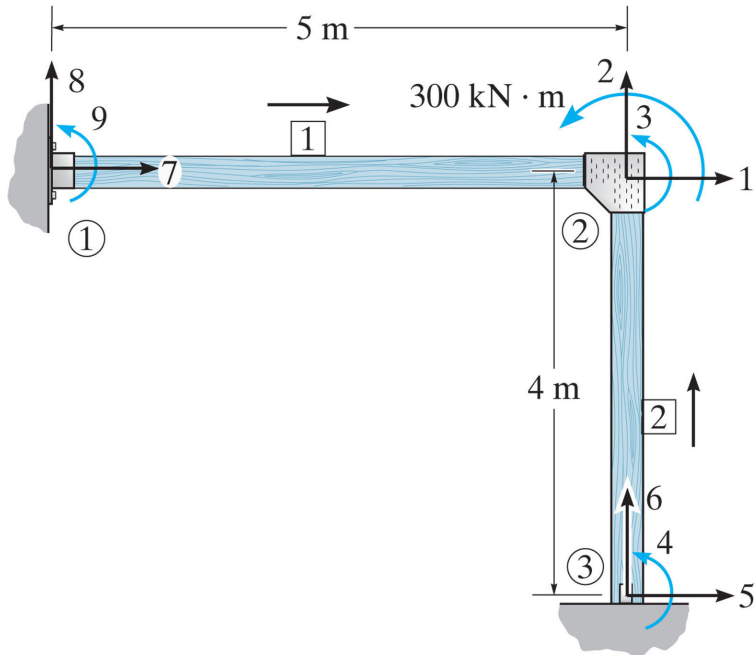Problem 16a-1 – Determine the components of displacement at ①. Take fixed, $E = 29 \ (10^3)$ ksi, $I = 650$ in⁴, and A = 20 in² for each member.

Problem 16a-2 – Determine the structure stiffness matrix **K** for the frame. Assume ③ is pinned, ① is fixed, $E = 200$ GPa, $I = 300 \ (10^6)$ mm⁴, and A = 21 (10³) mm² for each member.

Problem 16a-3 – Determine the support reactions at the fixed supports ① and ③. Take $E = 200$ GPa, $I = 300(10^6)$ mm⁴, $A = 10(10^3)$ mm² for each member.