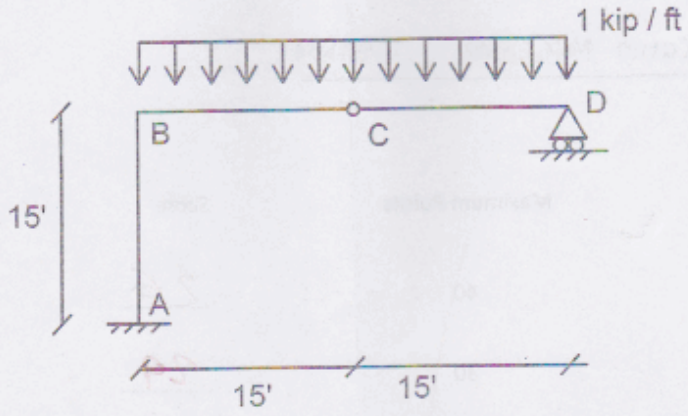
Problem 1 (40 points)

For the structure shown:

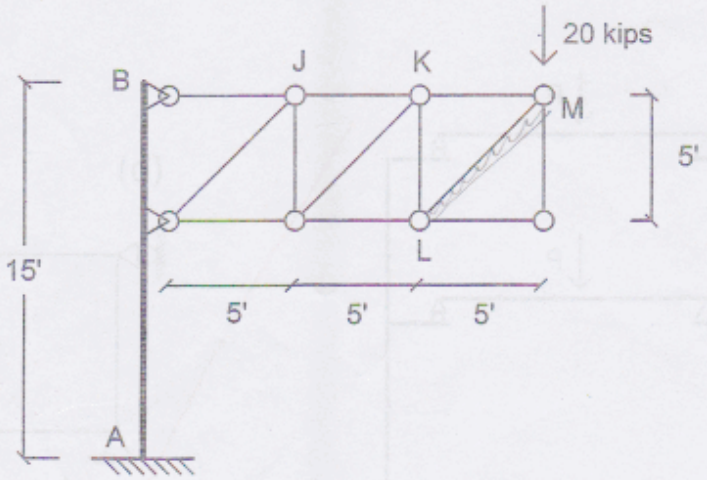
1. Find the reactions. **(12 points)**
2. Calculate and draw the bending moment, shear force and axial force diagrams. **(20 points)**
3. Draw the deflected shape. **(8 points)**



Problem 2 (30 points)

For the structure shown below:

1. Find the support reactions. **(4 points)**
2. Calculate the internal forces of members LM and JK. **(12 points)**
3. Calculate and draw the bending moment, shear force and axial force diagrams of member AB. **(14 points)**



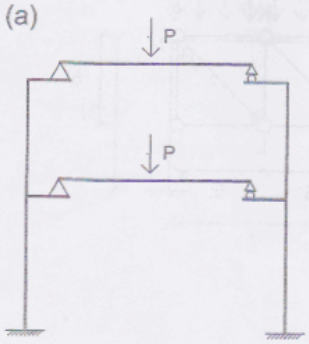
Problem 3 (30 points)

For the two structures shown below:

1) Prove whether they are stable or unstable. ***A structure is stable if it satisfies equilibrium under the applied loads.***

2) For the structures that are stable, find whether they are determinate. ***A structure is determinate if all the support reactions and internal forces can be calculated using equilibrium.***

(a)



(b)