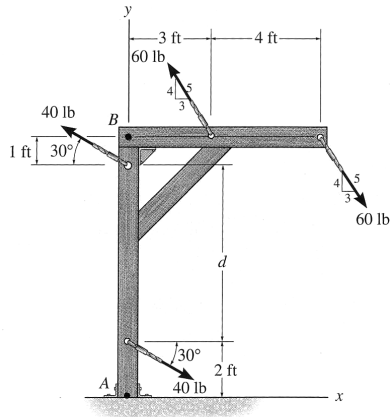


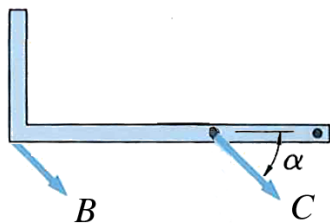
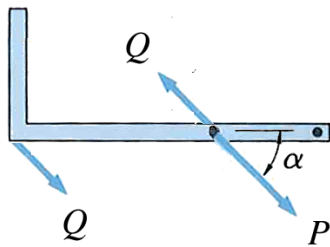
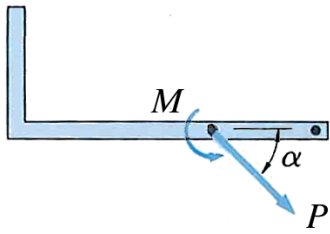
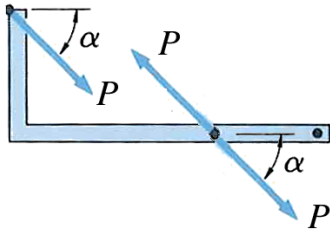
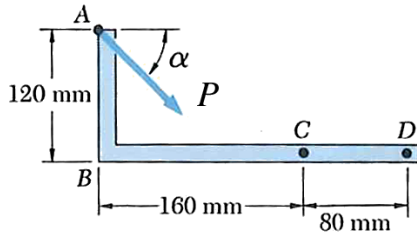
Problem 1 — Couples

Two couples act on the frame, as shown. Find the distance d , knowing that sum of the moments of the two couples is zero.



Problem 2 — Equivalent Force-Couple Systems

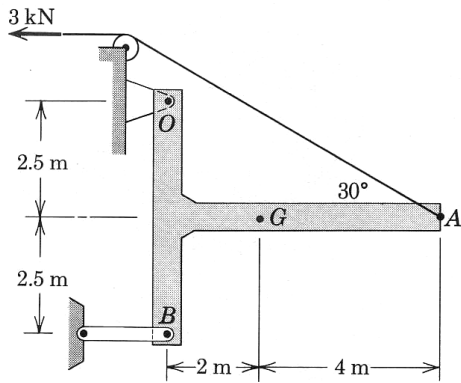
Knowing that $\alpha = 45^\circ$, replace the 600-N force P by (a) an equivalent force-couple system at C ,
(b) an equivalent system formed by two parallel forces at B and C .



Problem 3 — Rigid Body Equilibrium

A 200 kg T-frame has its center of gravity at G , and is supported by a pin at O and a short link at B .

Calculate the magnitude and direction of the force acting on the frame at O when a 3 kN force is applied to the cable.



Problem 4 — Three-force Body method

If the T-frame of the previous problem had negligible weight, it would be three-force body

Use the three force body method to calculate the reactions at O and B when a 10 kN force is applied to the cable and the weight of the frame is negligible.

