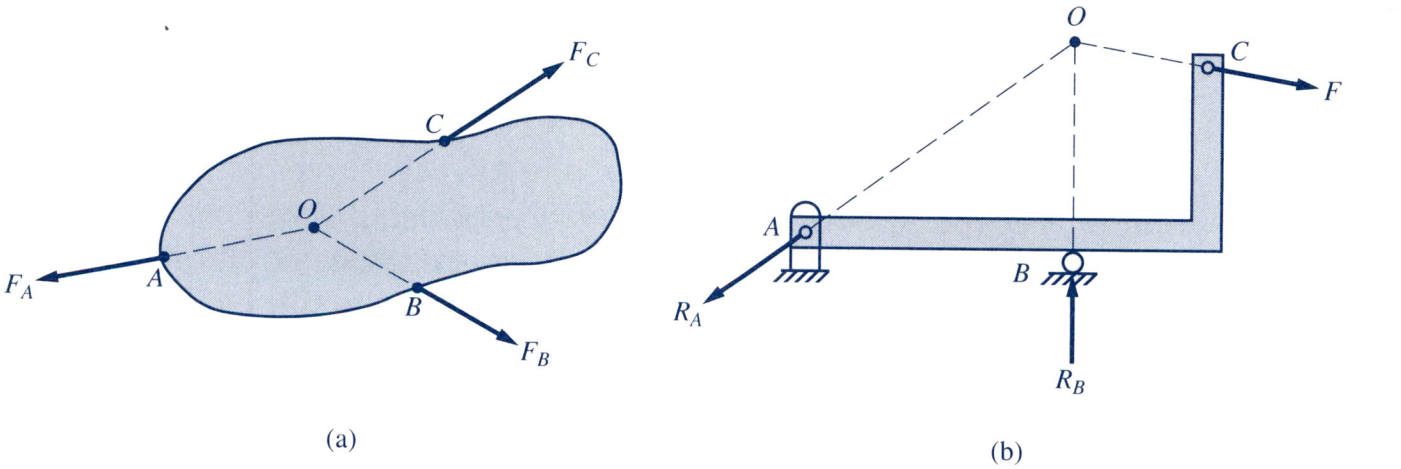
Three-Force Body



Equilibrium conditions require that the three forces be coplanar and concurrent.
Exception: The three forces are parallel.

3–39 See Fig. P3–39. Determine the reactions of the supports at *A* and *D* due to the 400-lb load applied to the frame shown by (*a*) the force triangle and (*b*) equilibrium equations.

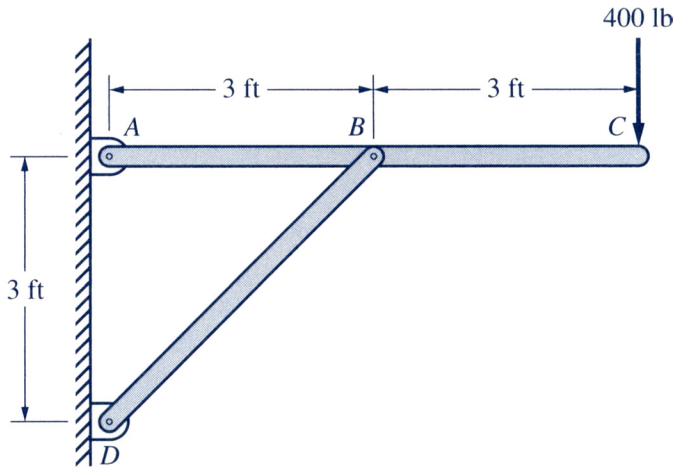
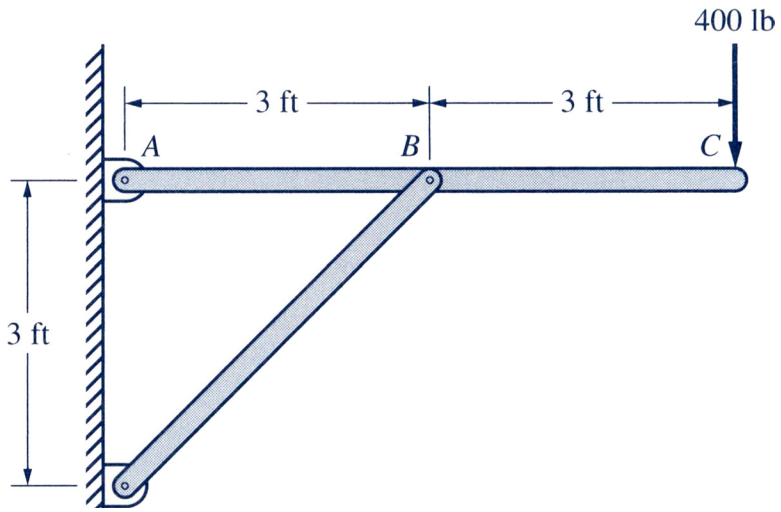


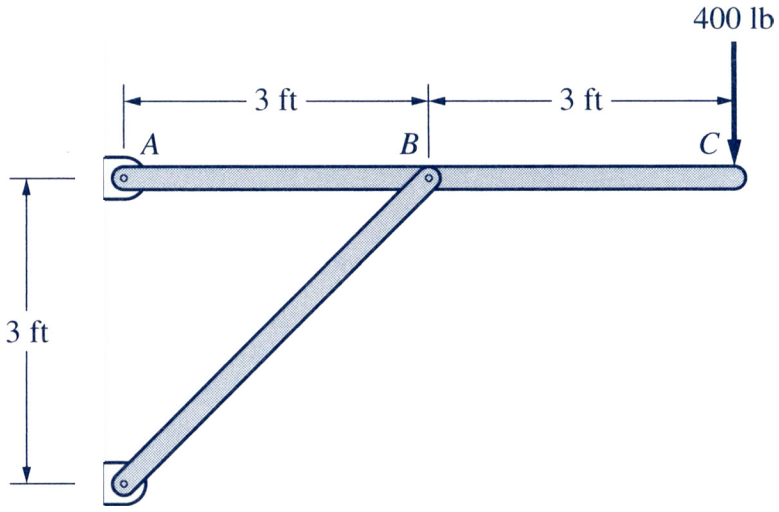
FIGURE P3–39

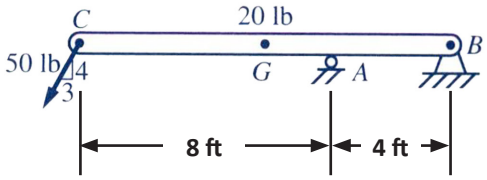
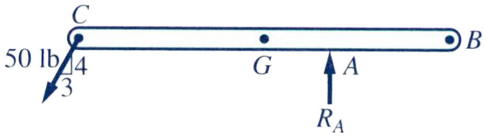
Solution. See next page

(a) the force triangle

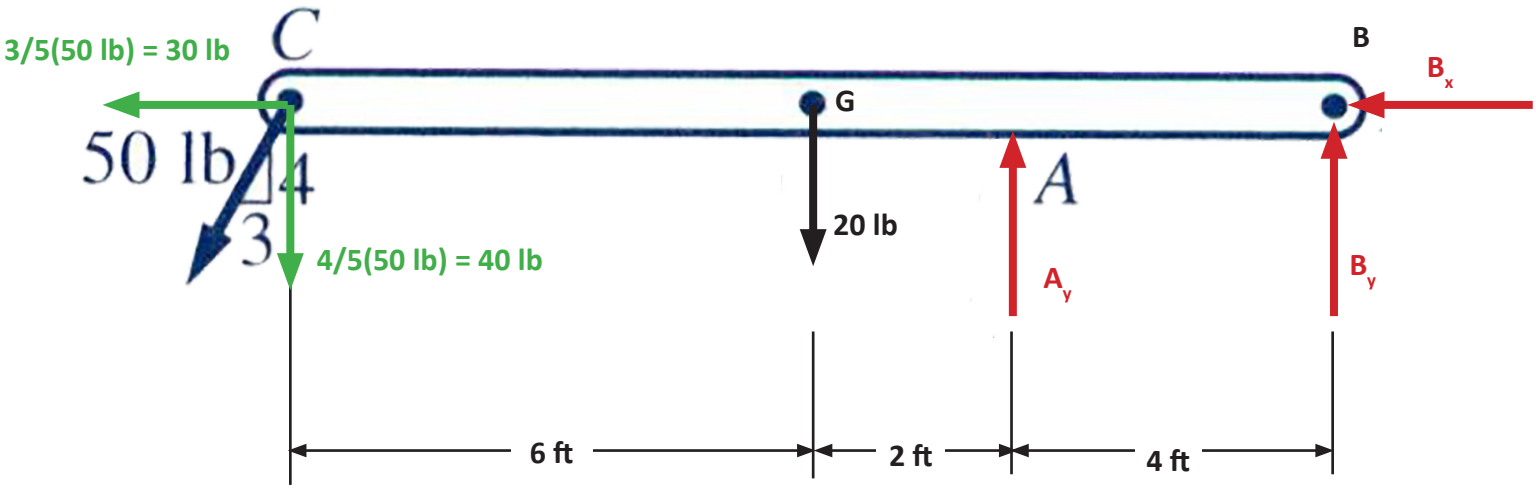


(a) equilibrium equations



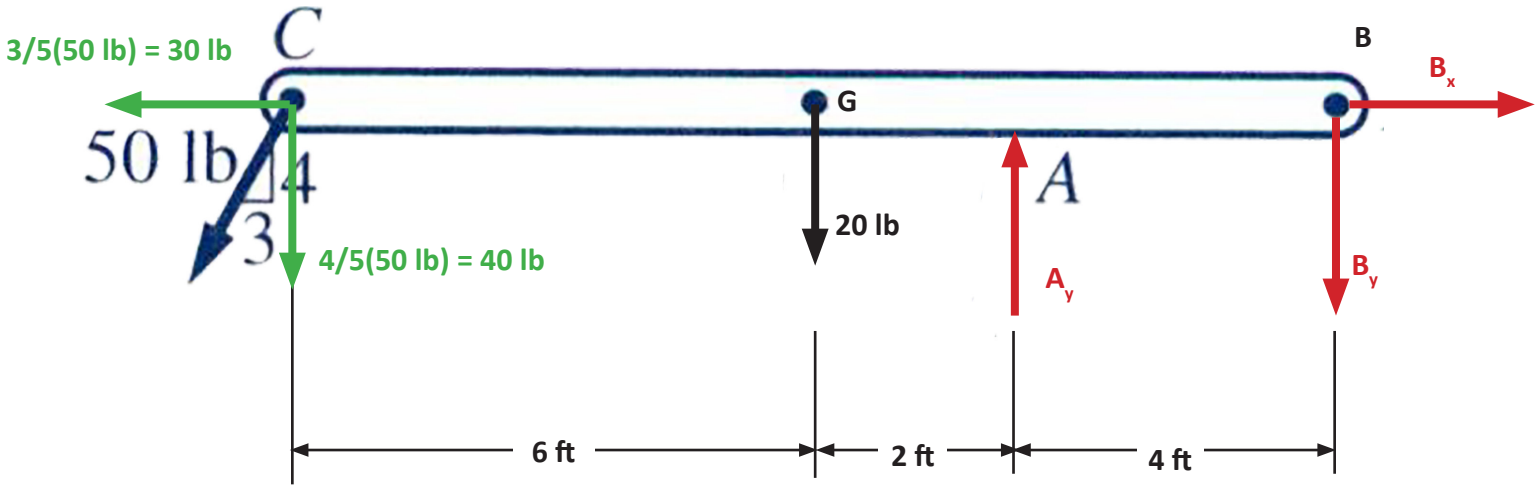
Problem	Description	Body	Incomplete FBD
3–1	Uniform beam of 20-lb weight supported by roller at A and hinge at B.		

Step 1. Draw the Free Body Diagram



FBD

Step 2. Equilibrium Equations



FBD

Equilibrium Equations

Identify the type of support and indicate the equivalent reaction provided by the support.