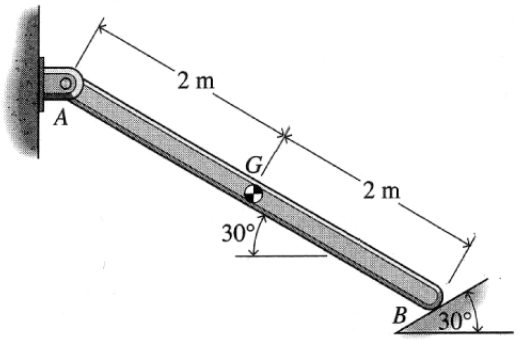
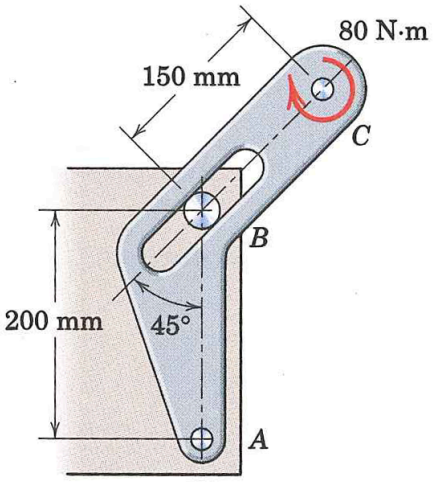
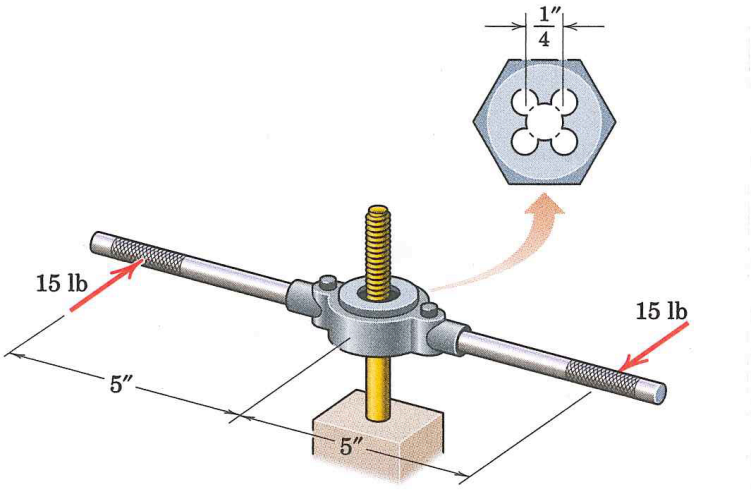
A 200 kg beam is is loaded and supported as shown. Determine the magnitude and direction of the reaction force at frictionless pin A and frictionless surface B.



Light bracket *ABC* is freely hinged at *A* and constrained by the fixed pin in a smooth slot at *B*. Determine the magnitude and direction of the force supported by pin *B* under the action of the 80 N-m couple at *C*.



A die is being used to cut threads on a rod. If 15 lb forces are are applied as shown, determine the magnitude F of the 4 equal forces exerted on the 1/4 in rod by each of the cutting surfaces so that their external effect on the rod is equivalent to that of the two 15 lb forces.



Determine the reactions at the fixed connection at point A.