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| **مهندس بوانی تمرین های استاتیک HW#4**  |
| 1. The turnbuckle is tightened until the tension in cable AB is 1.2 kN. Calculate the magnitude of the moment about point O of the force acting on point A.  | 2. The 120-N force is applied as shown to one end of the curved wrench. If $α=30°$,calculate the moment of F about the center O of the bolt. Determine the value of which would maximize the moment about O; state the value of this maximum moment. |
| 3. The steel H-beam is being designed as a column to support the two vertical forces shown. Replace these forces by a single equivalent force along the vertical centerline of the column and a couple M. | 4. The weight of the printer is 80 lb with center of gravity at point *G.* Determine the moment of this weight about point *O* on the horizontal table top. Find the magnitude of **M***0.* |
| 5. A right-angle bracket is welded to the flange of the I-beam to support the 9000-lb force, applied parallel to the axis of the beam, and the 5000-lb force, applied in the end plane of the beam. In analyzing the capacity of the beam to withstand the applied loads in the design stage, it is convenient to replace the forces by an equivalent force at O and a corresponding couple M. Determine the x-, y-, and z-components of M.  |  |