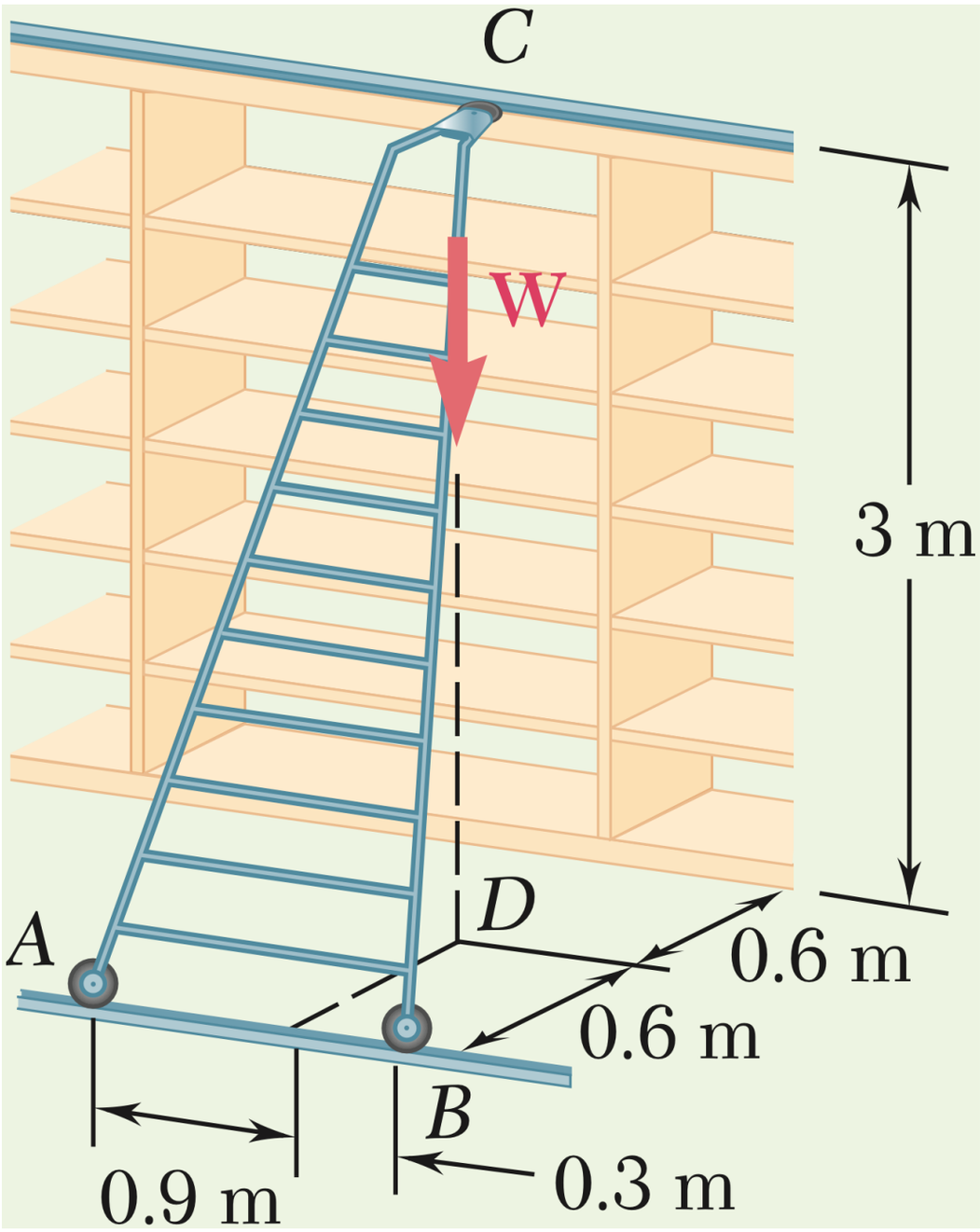
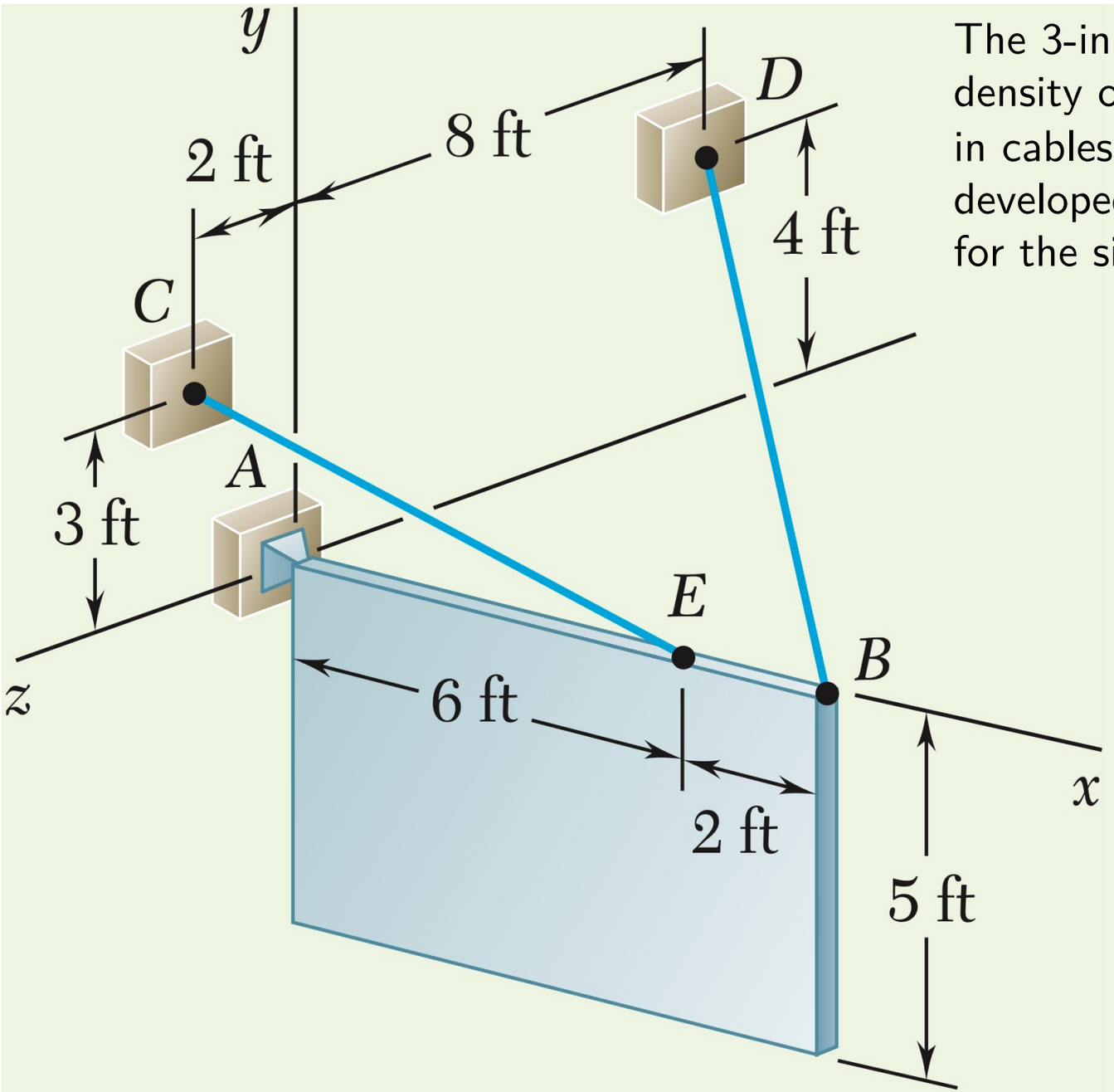
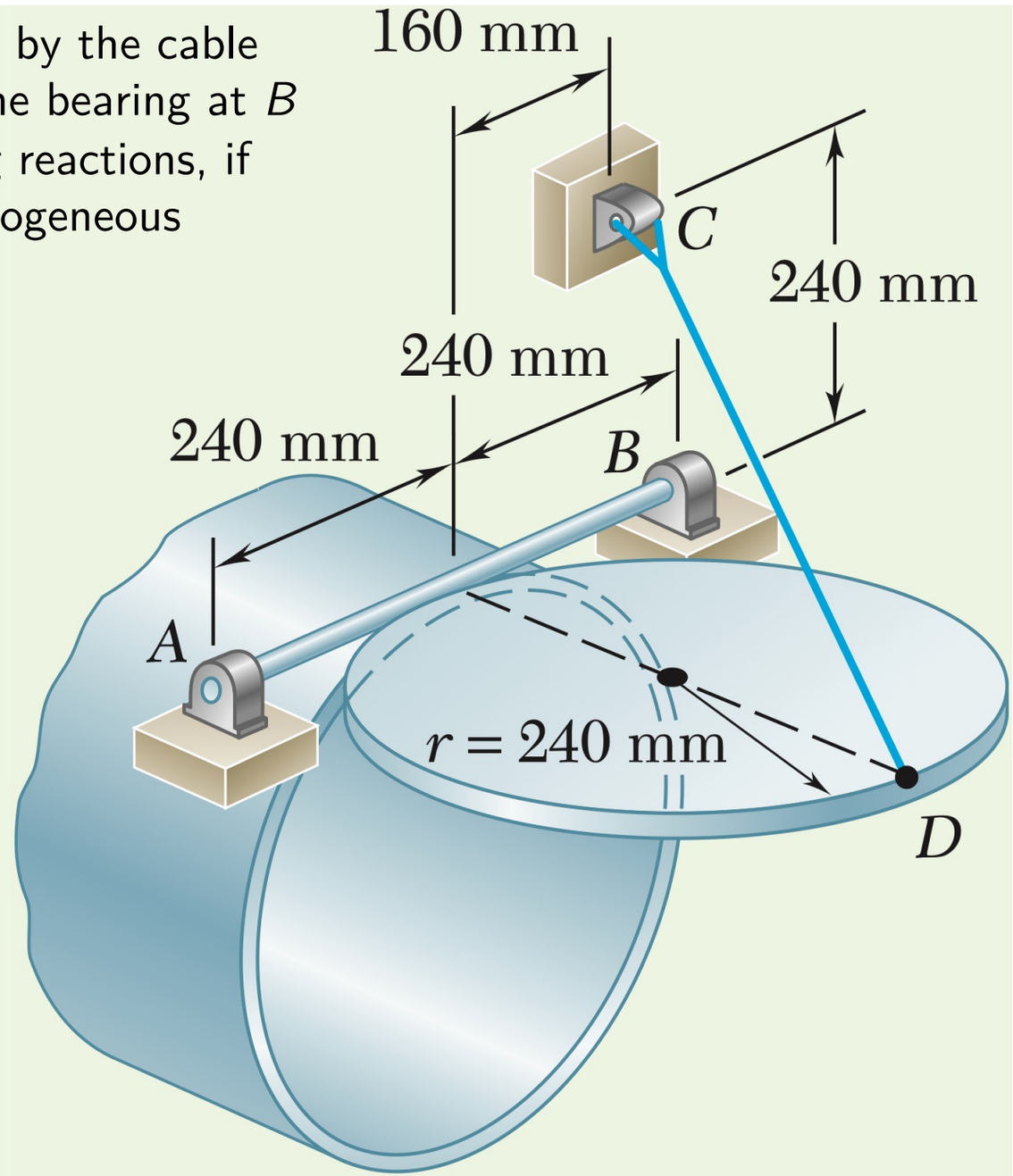


The ladder is supported by flanged wheels A, B, and C, the first two mounted on a rail fixed to the floor, and the last one resting against a rail fixed to the wall. An 80-kg person stands on the ladder such that the combined weight of the person and the ladder intersects the floor at D. Determine the reactions developed in the wheels if the ladder weighs 20 kg.



The 3-in thick sign is assumed to have a uniform density of 27 lb/ft^3. Determine tensions developed in cables *EC* and *BD* and the reaction magnitude developed in the ball-and-socket joint at *A* required for the sign to be at static equilibrium.

The 30-kg circular pipe cover is horizontally oriented by the cable *CD*. The bearing at *A* exerts an axial thrust, while the bearing at *B* does not. Estimate the cable tension and the bearing reactions, if the cover is assumed to be uniformly made of a homogeneous material.



Suppose $ABCD$ is rigid and is supported by cable EG and ball-and-socket joints at A and D which are fastened to the floor and to a vertical wall, respectively. Locate G (on the wall) such that the cable tension is a minimum, and what is that minimum tension.