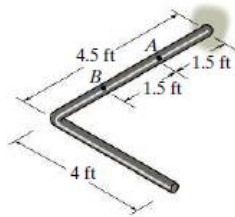


MAK 206 HW #4

5-17. The rod has a diameter of 1 in. and a weight of 10 lb/ft. Determine the maximum torsional stress in the rod at a section located at *A* due to the rod's weight.

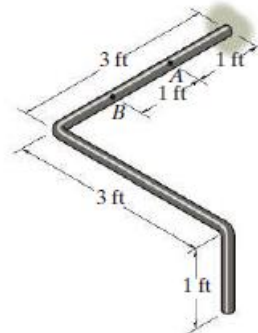
5-18. The rod has a diameter of 1 in. and a weight of 15 lb/ft. Determine the maximum torsional stress in the rod at a section located at *B* due to the rod's weight.



Probs. 5-17/18

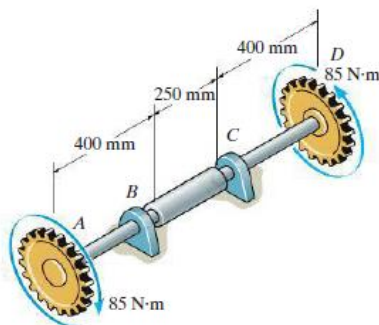
***5-44.** The rod has a diameter of 0.5 in. and weight of 5 lb/ft. Determine the maximum torsional stress in the rod at a section located at *A* due to the rod's weight.

5-45. Solve Prob. 5-44 for the maximum torsional stress at *B*.



Probs. 5-44/45

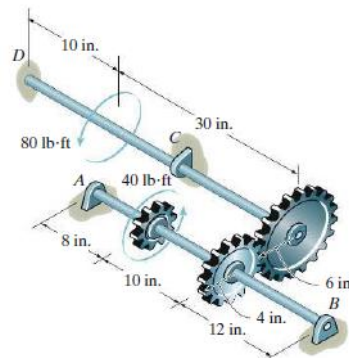
5-49. The A-36 steel axle is made from tubes *AB* and *CD* and a solid section *BC*. It is supported on smooth bearings that allow it to rotate freely. If the gears, fixed to its ends, are subjected to 85-N·m torques, determine the angle of twist of gear *A* relative to gear *D*. The tubes have an outer diameter of 30 mm and an inner diameter of 20 mm. The solid section has a diameter of 40 mm.



Prob. 5-49

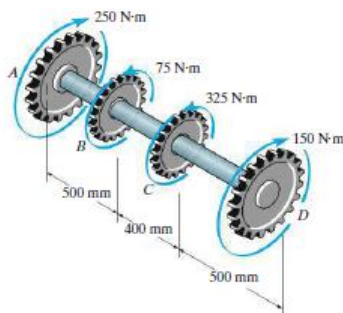
5-61. The two shafts are made of A992 steel. Each has a diameter of 1 in., and they are supported by bearings at *A*, *B*, and *C*, which allow free rotation. If the support at *D* is fixed, determine the angle of twist of end *B* when the torques are applied to the assembly as shown.

5-62. The two shafts are made of A992 steel. Each has a diameter of 1 in., and they are supported by bearings at *A*, *B*, and *C*, which allow free rotation. If the support at *D* is fixed, determine the angle of twist of end *A* when the torques are applied to the assembly as shown.



Probs. 5-61/62

FS-7. The solid 50-mm-diameter shaft is used to transmit the torques applied to the gears. Determine the absolute maximum shear stress in the shaft.



FS-7