

1. Find the reactive forces and the moment at the wall for the cantilever beam supported as shown in figure 1. M_A and R_2 are the reactions at the fixed support and R_1 is the reaction at the roller support.

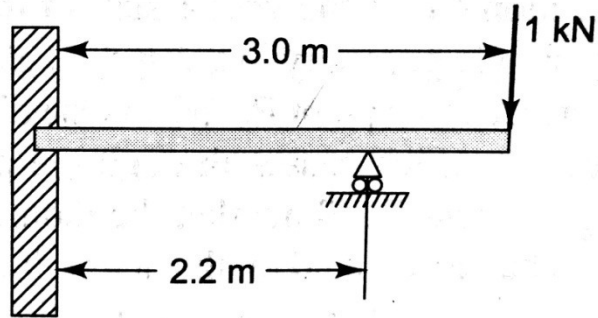


Figure 1

2. Two equal cylinders, each weighing 900 N are placed in a box as shown in figure 2. Neglecting friction between the cylinders and the box, estimate the reactions at A, B and C. Find F_A , F_B , F_C .

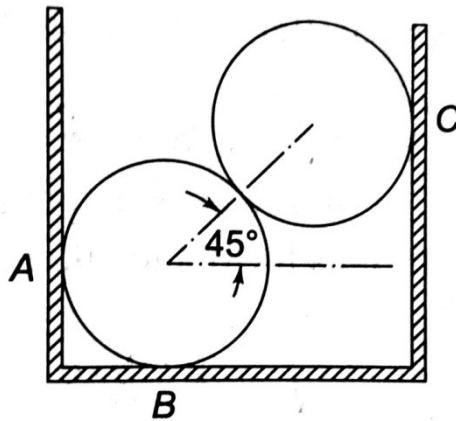


Figure 2

3. Compare the forces F required to just start the 900 N lawn rollers as shown in figure 3, over a 75 mm step when (a) the roller is pushed and (b) the roller is pulled.

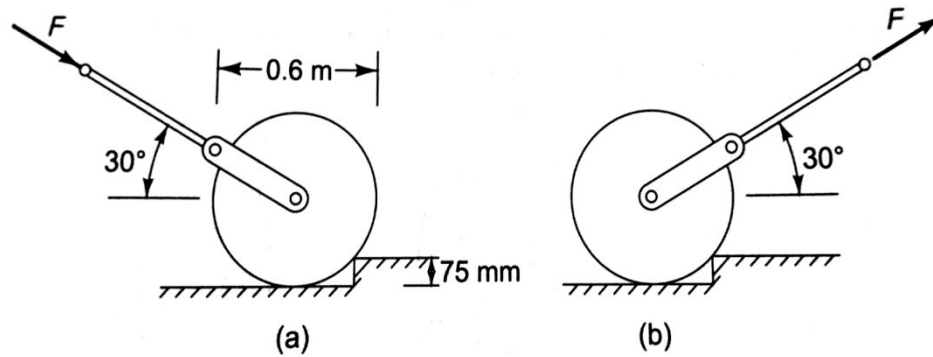


Figure 3

4. The bracket ABC is free to swing out horizontally on the vertical rod as shown in figure 4. Estimate the forces transmitted to the vertical rod at A and B when a 900 N load is supported at C.

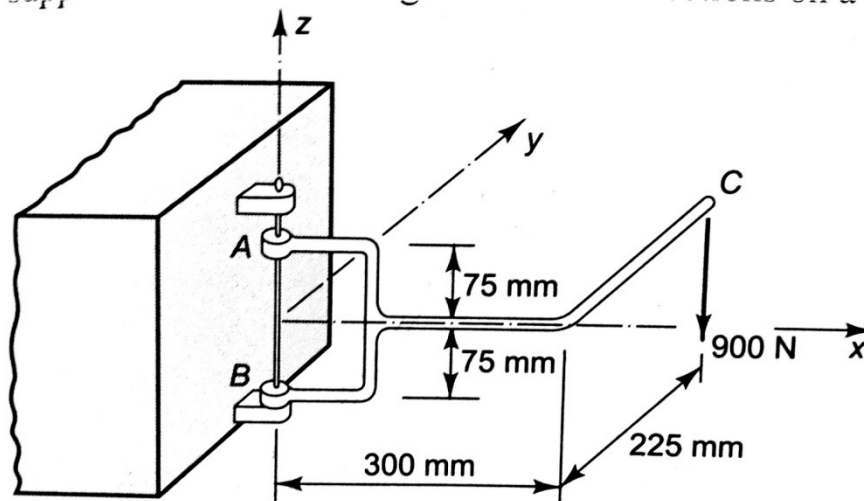


Figure 4

5. A 100 N force is required to operate the foot pedal as shown in figure 5. Determine the force (reactions at O) in the connecting link and the force (F) exerted by the lever on the bearing at O. Neglect the weight of the lever.

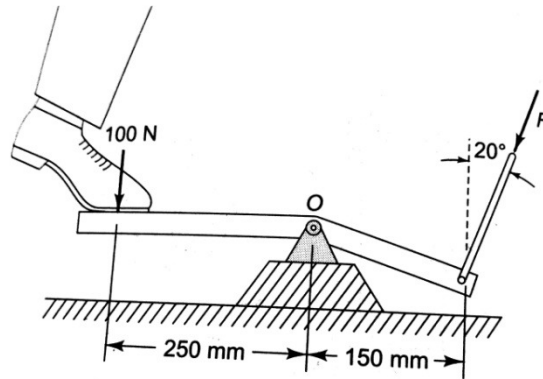


Figure 5

6. A spot weld which holds the bracket to the plate at joint A as shown in figure 6, can withstand a maximum twist in the plane of the plate of 100 Nm. Determine the maximum load W.

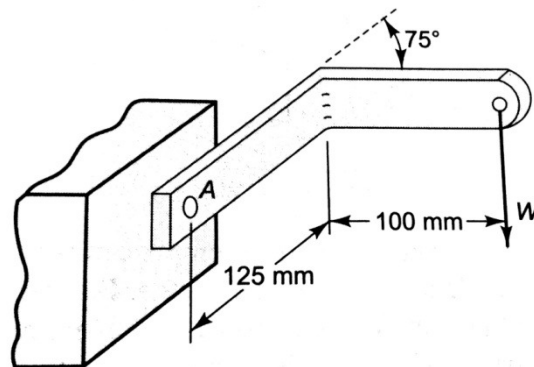


Figure 6