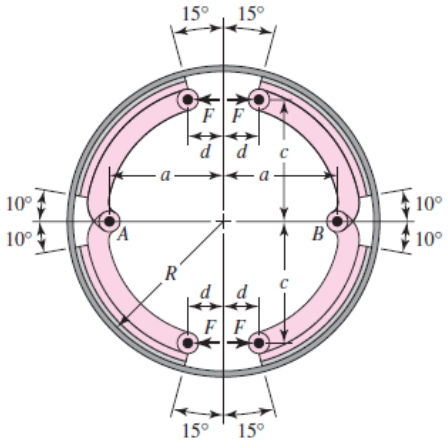
April 12, 2018

ME351A- Design of Machine Elements- Design exercise No: 7

1. The brake shown in figure has four internal shoes. The dimensions are as follows, *a=175 mm, c=200 mm, R=250 mm* and *d=40 mm.* The actuating mechanism exerts the same force F to all shoes. If the maximum allowable pressure is 1 MPa, calculate the maximum braking torque and the corresponding actuation force F. The coefficient of friction is 0.2 and the width of the brake pad is 50 mm.



2. Figure below shows a load driven by a multi-plate clutch through a ***constant speed*** motor. The maximum pressure allowable for the material is 200 kPa and the coefficient of friction is 0.2. Calculate the maximum torque that can be transferred by this clutch for uniform wear condition.