Department of Mechanical Engineering (NITC)

S1ME **ZZ1001D ENGINEERING MECHANICS** **Tutorial Test 3-Set 1**

Time: One Hour Maximum Marks: 20

1. Estimate the supporting force system at the end A for the cantilever beam shown in Fig. 1. Neglect the weight of the beam.
2. Locate the centroid of the shaded area shown in Fig. 2.

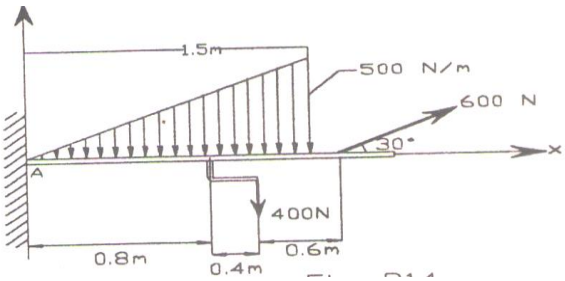


Figure 1

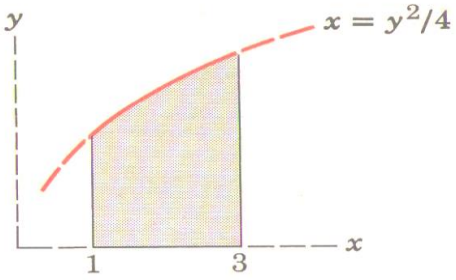


figure 2

----------**P.T.O**----------

Department of Mechanical Engineering (NITC)

S1ME **ZZ1001D ENGINEERING MECHANICS** **Tutorial Test 3-Set 1**

Time: One Hour Maximum Marks: 20

1. Estimate the supporting force system at the end A for the cantilever beam shown in Fig. 1. Neglect the weight of the beam.
2. Locate the centroid of the shaded area shown in Fig. 2.

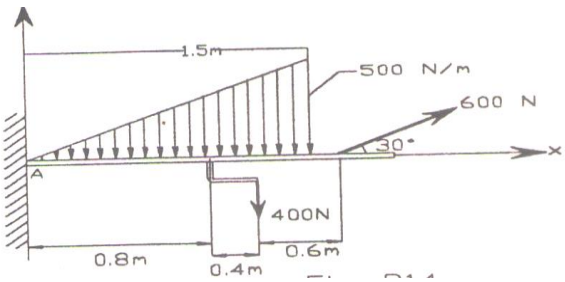


Figure 1

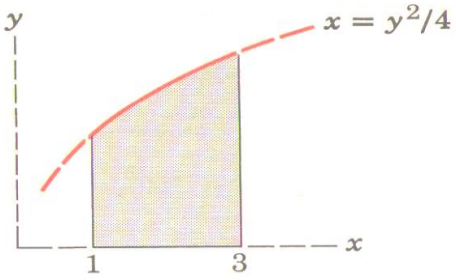
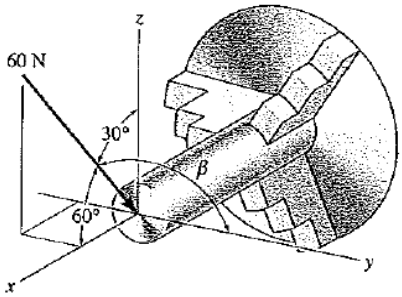


figure 2

----------**P.T.O**----------

3. The stock mounted on the lathe is subjected to a force of 60N. Determine the coordinate direction angle and express the force as a Cartesian vector fig 3.
4. Determine the magnitude and location of the resultant hydrostatic force acting on the submerged rectangular plate *AB* shown in Fig. 4. The plate has a width of 1.5 m density = 1000 kg/m^3 Fig 4?



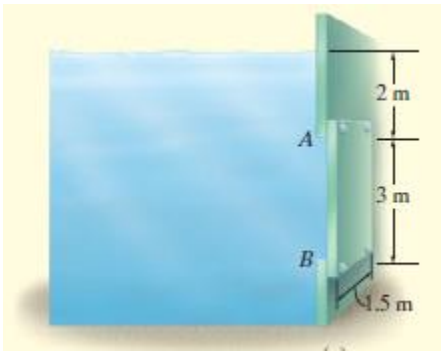
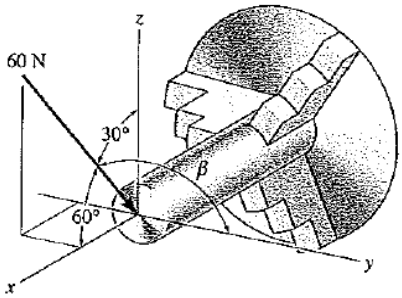


Figure 3 figure 4

3. The stock mounted on the lathe is subjected to a force of 60N. Determine the coordinate direction angle and express the force as a Cartesian vector fig 3.
4. Determine the magnitude and location of the resultant hydrostatic force acting on the submerged rectangular plate *AB* shown in Fig. 4. The plate has a width of 1.5 m density = 1000 kg/m^3 Fig 4?



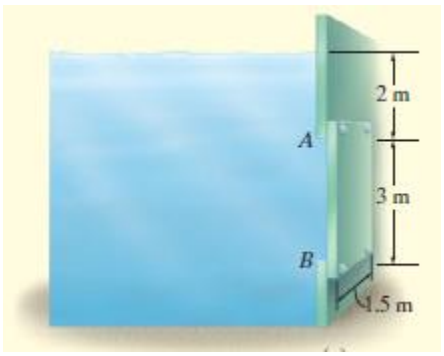


Figure 3 figure 4