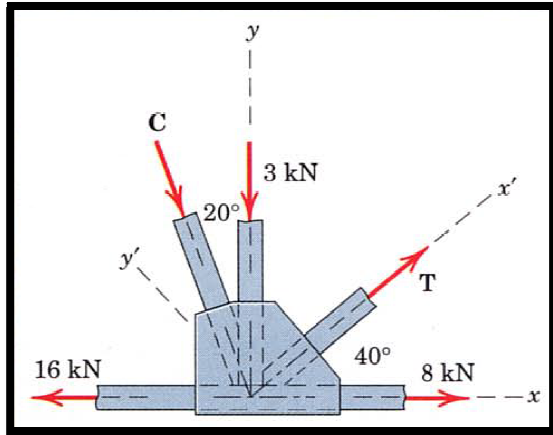


Tutorial no.: 1

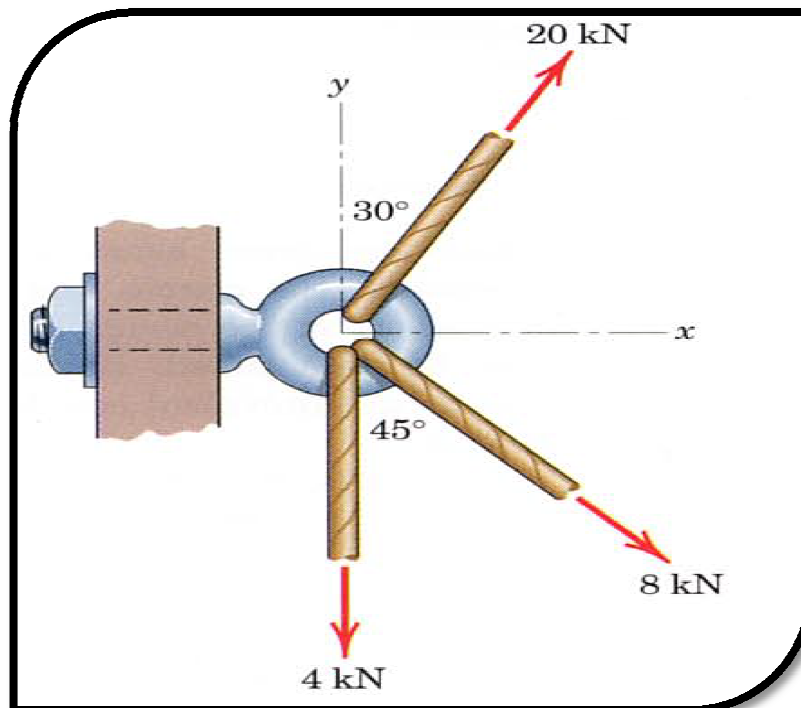
Q.1: Determine the magnitude of the forces C and T , which along with the other three forces shown, act on the bridge-truss joint.



Q.2:

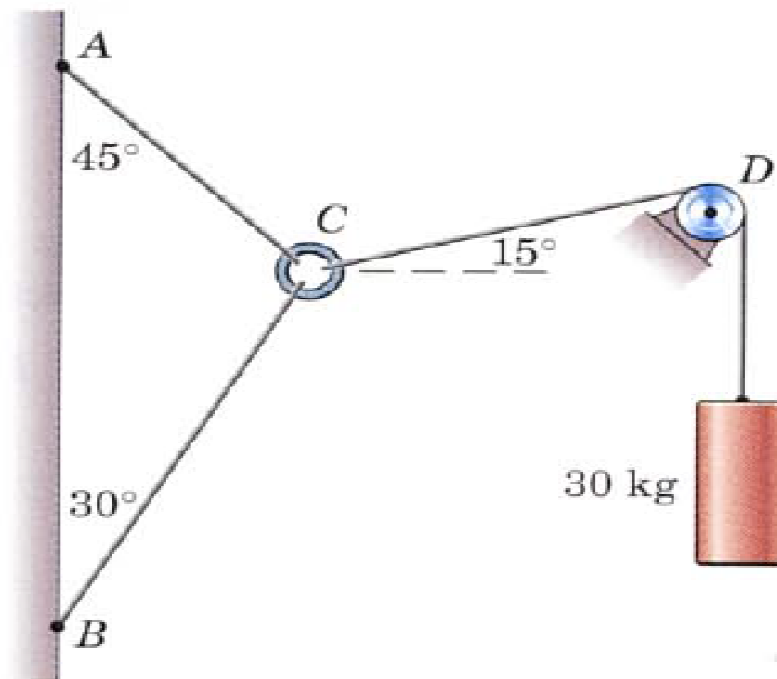
Determine the resultant \mathbf{R} of the three tension forces acting on the eye bolt. Find the magnitude of \mathbf{R} and the angle θ_x which \mathbf{R} makes with the positive x -axis.

Ans. $R = 17.43 \text{ kN}$, $\theta_x = 26.1^\circ$



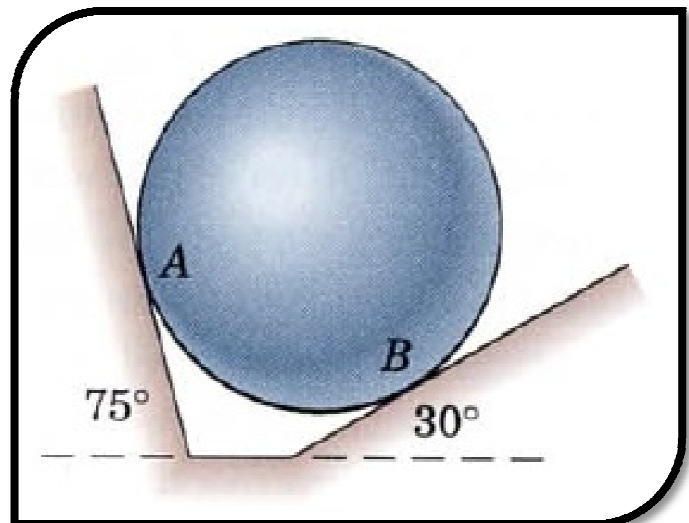
Q.3:

Three cables are joined at the junction ring C . Determine the tensions in cables AC and BC caused by the weight of the 30-kg cylinder.

**Q4:**

The 20-kg homogeneous smooth sphere rests on the two inclines as shown. Determine the contact forces at A and B .

Ans. $N_A = 101.6 \text{ N}$, $N_B = 196.2 \text{ N}$



Q5:

What horizontal force P must a worker exert on the rope to position the 50-kg crate directly over the trailer?

Ans. $P = 126.6 \text{ N}$

