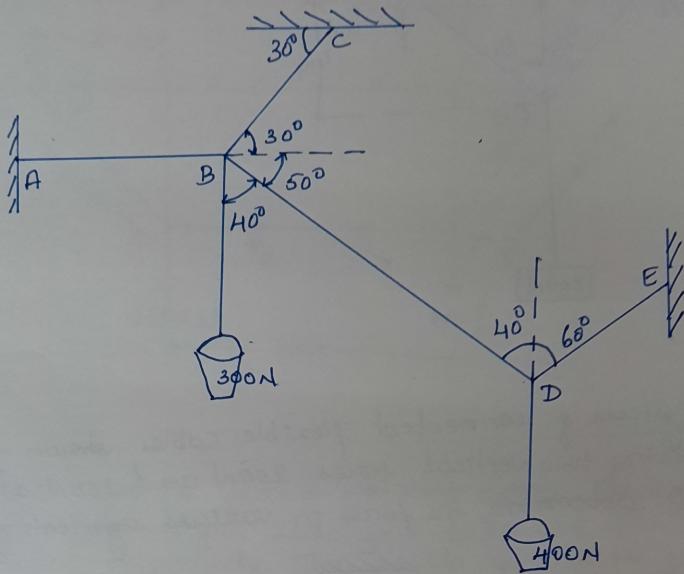
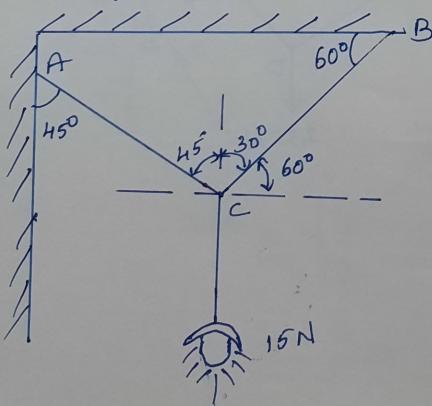


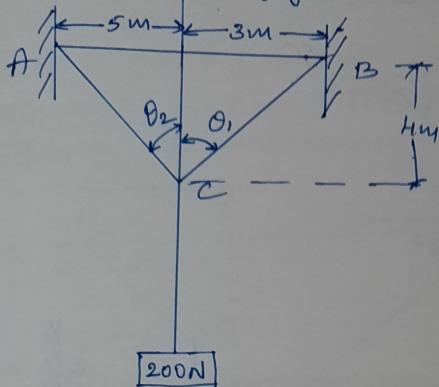
- 7] Two loads are suspended by a rope system as shown in the fig. Determine the tensions in the portion of the string, AB, BC, BD and DE.



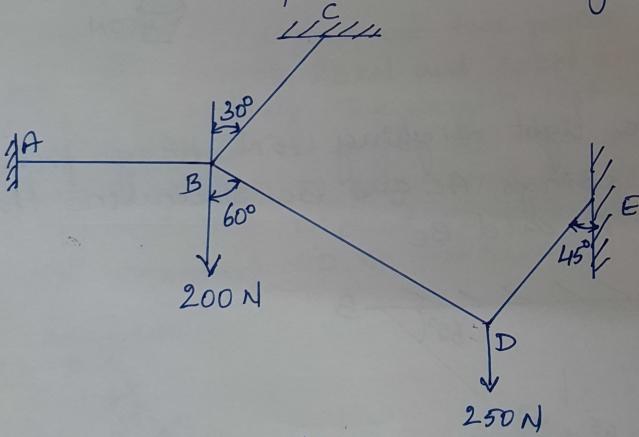
- 8] An electric light weighing 15N hangs from a point C by two strings AC and BC. Determine the forces in the strings AC and BC



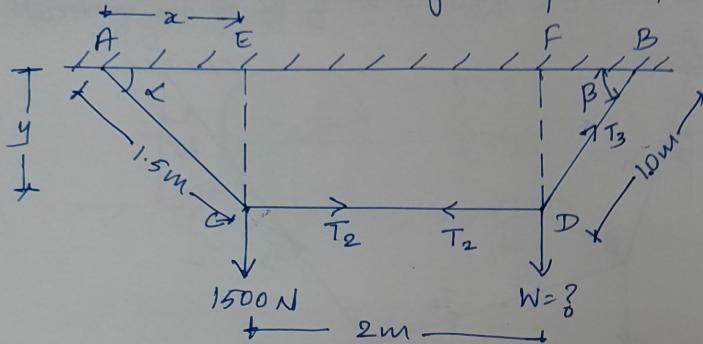
9] Two cables are tied together at C and loaded as shown in the fig. Determine tensions in AC & BC.



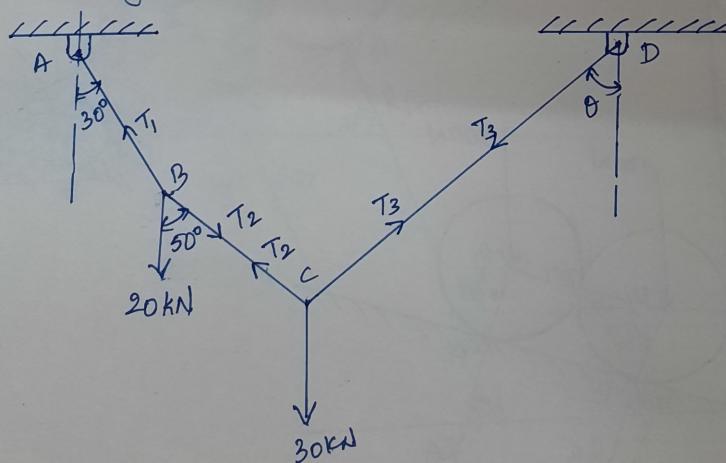
10] A system of connected flexible cables shown in fig. is supporting two vertical forces 200N and 250N at points B and D. Determine the forces in various segments of the cable.



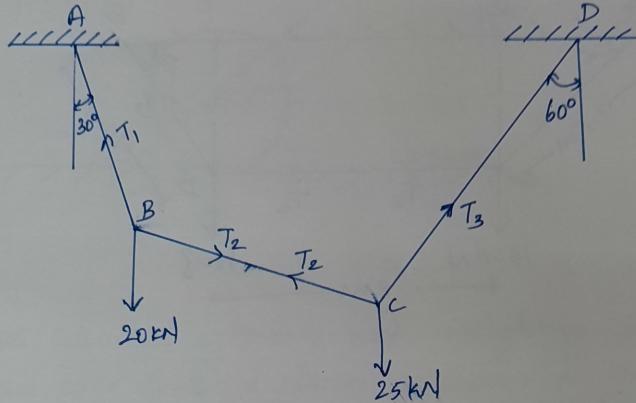
11] A rope AB, 4.5m long is connected at two points A & B at the same level 4m apart. A load of 1500N is suspended from a point C on the rope 1.5m from A as shown in fig. What load connected at point D on the rope, 1m from B will be necessary to keep the position CD level?



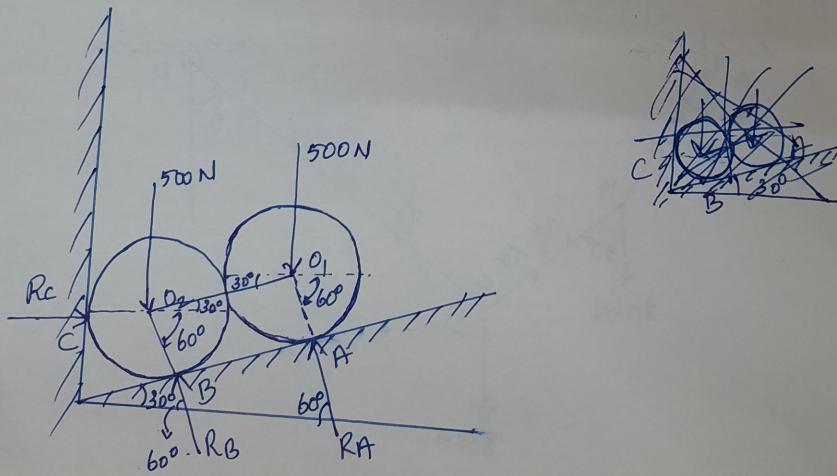
12] A wire rope is fixed at two points A and D as shown in fig. Two weights 20kN and 30kN are attached to it at B and C, respectively. The weights rest with positions AB and BC inclined at angles  $30^\circ$  and  $50^\circ$  respectively, to the vertical as shown in fig. Find the tension in the wire in segments AB, BC and CD and also the inclination of the segments CD to vertical.



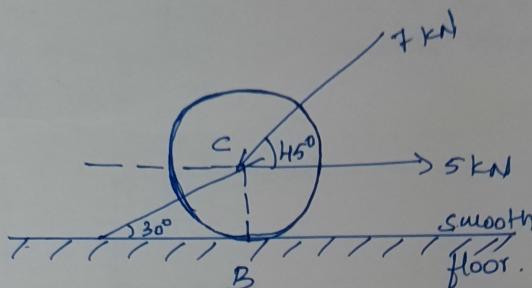
13] A wire is fixed at two points A and D as shown in fig. Two weights 20kN and 25kN are supported at B + C, respectively. When equilibrium is reached it is found that inclination of AB is  $30^\circ$  and that of CD is  $60^\circ$  to the vertical. Determine the tension in the segments AB, BC and CD of the rope and also the inclination of BC to the vertical.



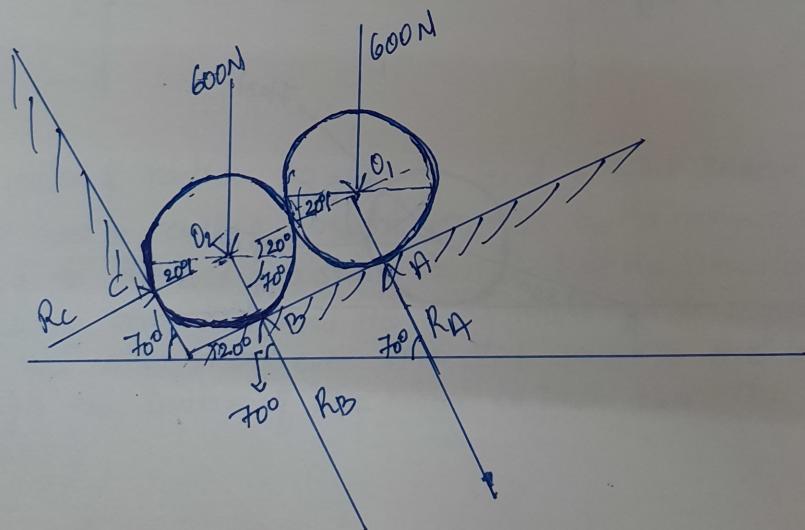
14] Two identical rollers each of weight 500N are supported by an inclined plane and a vertical wall as shown in fig. Assuming smooth surfaces, find the reactions induced at the points A, B and C.



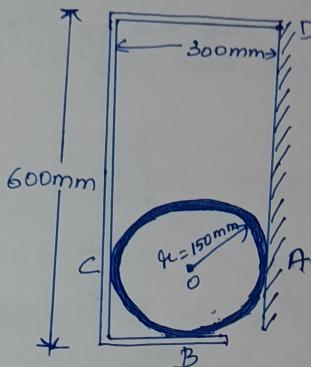
- 15] A roller of wt. 10kN rests on a smooth horizontal floor and is connected to the floor by the bar AC as shown in the fig. Determine the force in the bar AC and reaction from the floor.



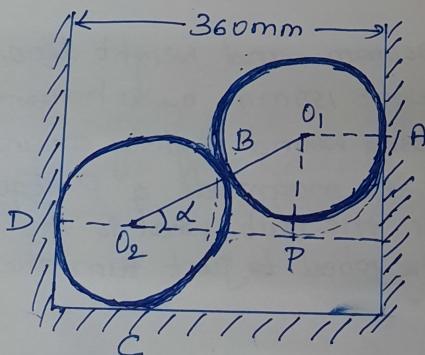
- 16] Two identical cylinders each weighing 600N are placed over inclined planes as shown in the fig. Find the reactions at the points A, B & C.



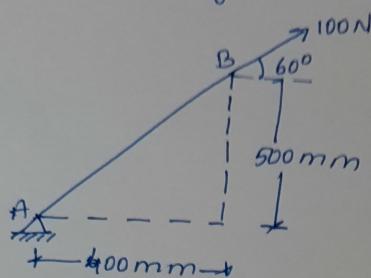
21 A 600N cylinder is supported by the frame BCD as shown in fig. The frame is hinged at D. Determine the reactions at A, B, C and D.



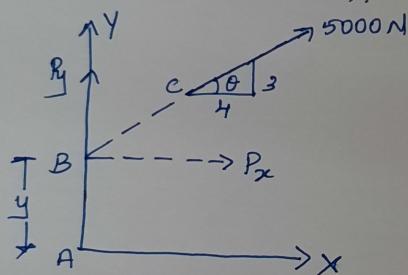
22 Two smooth spheres each of radius 100mm & weight 100N, rest in a horizontal channel having vertical walls, the distance between which is 360mm. Find the reactions at the points of contact A, B, C and D.



23] Find the moment of 100N force acting at B about point A as shown in fig.



24] What will be the y intercept of the SODN force if its moment about A is 8000 N-m.



25] A 400N sphere is resting in a trough as shown in fig. Determine the reactions developed at contact surfaces. Assume all contact surfaces are smooth.

