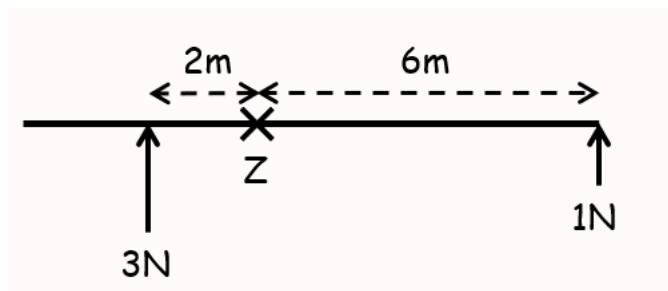
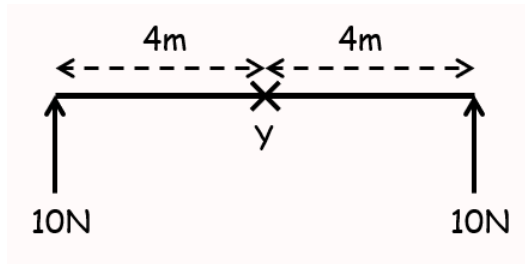
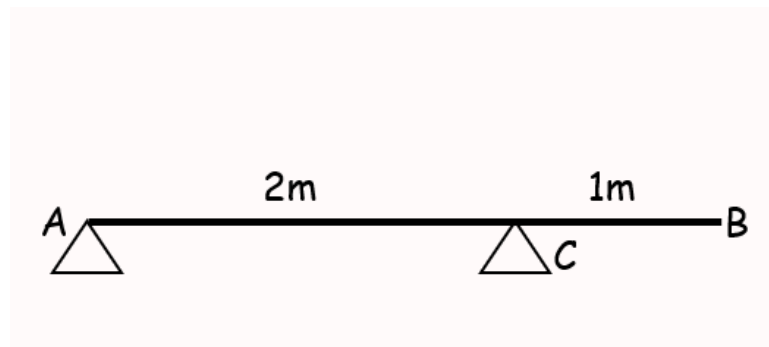


4C Uniform Rods



1. The diagram shows a uniform rod of length 3m and weight 20N resting horizontally on supports at A and C, where AC = 2m. Calculate the magnitude of the normal reaction at both of the supports



2. A uniform beam, AB, of mass 40kg and length 5m, rests horizontally on supports at C and D where $AC = DB = 1\text{m}$.

When a man of mass 80kg stands on the beam at E, the magnitude of the reaction at D is double the reaction at C.

By modelling the beam as a rod and the man as a particle, find the distance AE

3. A uniform rod PQ is hinged at the point P , and is held in equilibrium at an angle of 50° to the horizontal by a force of magnitude F acting perpendicular to the rod at Q . Given that the rod has a length of 3m and a mass of 8kg , find the value of F .

