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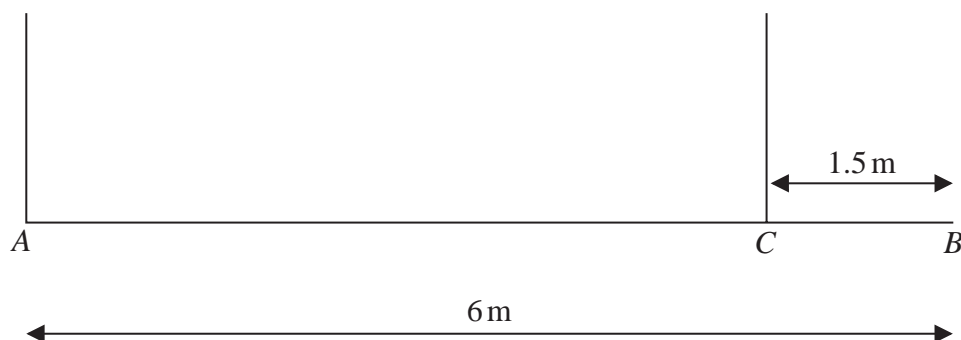


Figure 1

A non-uniform beam AB has length 6 m and weight W newtons. The beam is supported in equilibrium in a horizontal position by two vertical ropes, one attached to the beam at A and the other attached to the beam at C , where $CB = 1.5$ m, as shown in Figure 1.

The centre of mass of the beam is 2.625 m from A.

The ropes are modelled as light strings. The beam is modelled as a non-uniform rod.

Given that the tension in the rope attached at C is 20 N greater than the tension in the rope attached at A ,

- (a) find the value of W .

(6)

- (b) State how you have used the fact that the beam is modelled as a rod.

(1)



Q2

(Total 7 marks)

5

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