1.

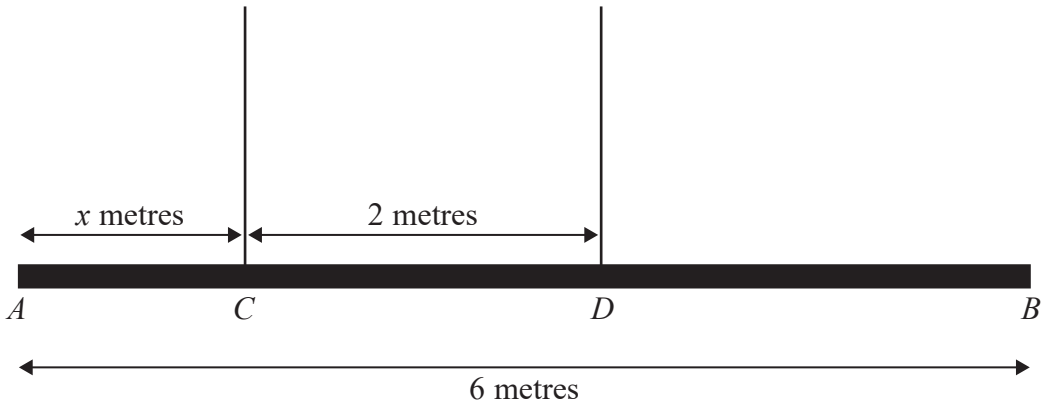

Figure 1

Figure 1 shows a beam AB with weight 24 N and length 6 m.

The beam is suspended by two light vertical ropes. The ropes are attached to the points C and D on the beam where $AC = x$ metres and $CD = 2$ m.

The tension in the rope attached to the beam at C is double the tension in the rope attached to the beam at D.

The beam is modelled as a uniform rod, resting horizontally in equilibrium.

Find

(i) the tension in the rope attached to the beam at D.

(ii) the value of x.

(5)

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Question 1 continued

(Total for Question 1 is 5 marks)