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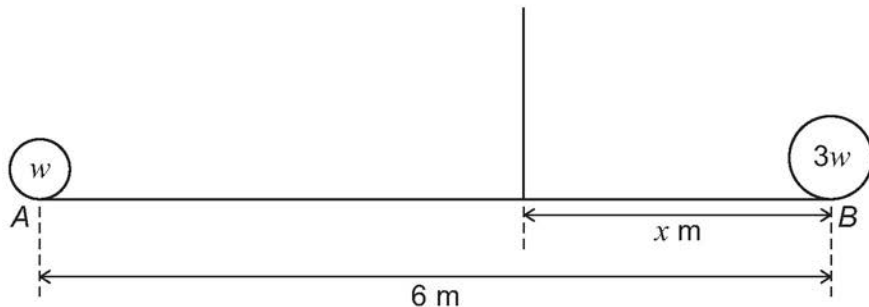
A straight uniform rod, AB , has length 6 m and mass 0.2 kg

A particle of weight w newtons is fixed at A .

A second particle of weight $3w$ newtons is fixed at B .

The rod is suspended by a string from a point x metres from B .

The rod rests in equilibrium with AB horizontal and the string hanging vertically as shown in the diagram below.



Show that

$$x = \frac{3w + 0.3g}{2w + 0.1g}$$

[4 marks]