**Equilibrium**

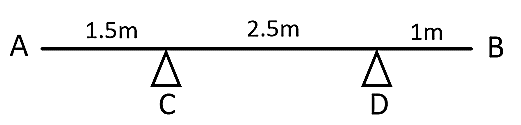
If a rigid body is in equilibrium:

1.

2.

**Example**

AB is a uniform rod of length 5m and weight 20N. AB is resting in a horizontal position on supports at C and D. Find the magnitude of the reactions at C and D.



**Example**

A uniform beam AB, of length 2m and mass 4kg, has a mass of 3kg attached to one end and a mass of 1kg attached at the other end. Find the position of the support C, if the beam rests in a horizontal position.

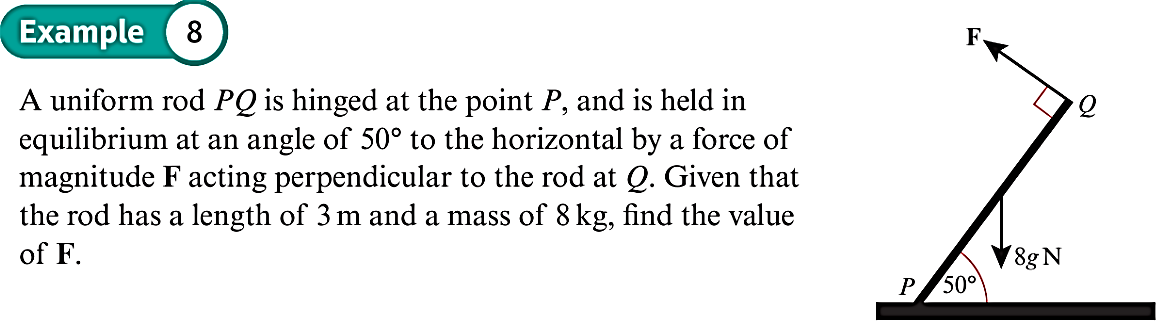
*Remember to include all forces on your force diagram.*

*There are two ways to solve this problem:*

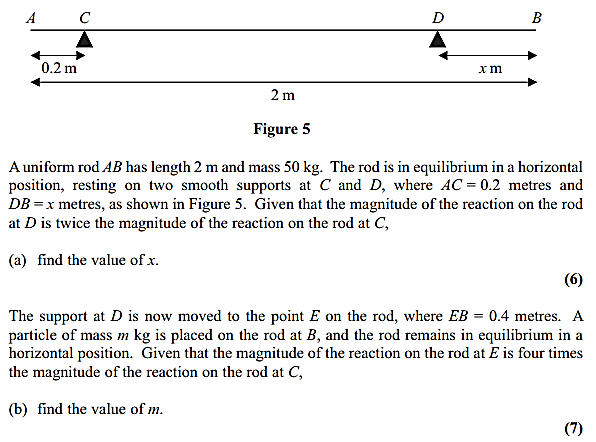
*1) Take moments about C*

*2) Resolve forces to find the reaction at C, then take moments about one end*

**Test Your Understanding** *(Textbook)*



**Test Your Understanding** *(EdExcel M1 May 2013 (R) Q8)*



Exercise 4C Page 78