14 A metal rod, of mass m kilograms and length 20 cm, lies at rest on a horizontal shelf.
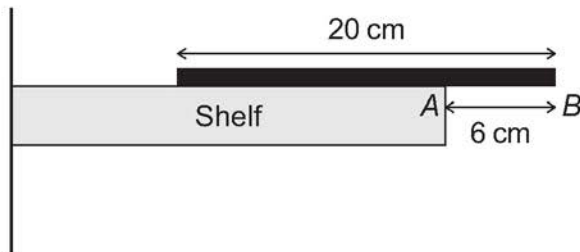
The end of the rod, B, extends 6 cm beyond the edge of the shelf, A, as shown in the diagram below.

14 (a) The rod is in equilibrium when an object of mass 0.28 kilograms hangs from the midpoint of AB.

Show that $m = 0.21$

[3 marks]

14 (b) The object of mass 0.28 kilograms is removed.

A number, n, of identical objects, each of mass 0.048 kg, are hung from the rod all at a distance of 1 cm from B.

Find the maximum value of n such that the rod remains horizontal.

[4 marks]

14 (c) State one assumption you have made about the rod.

[1 mark]