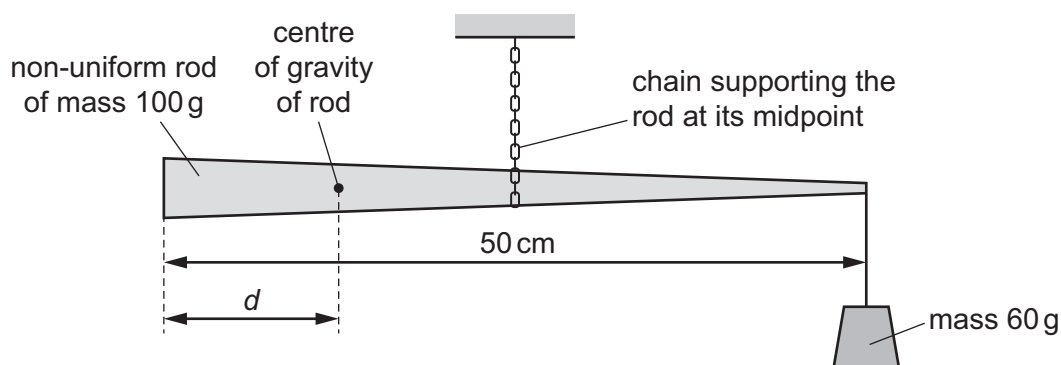


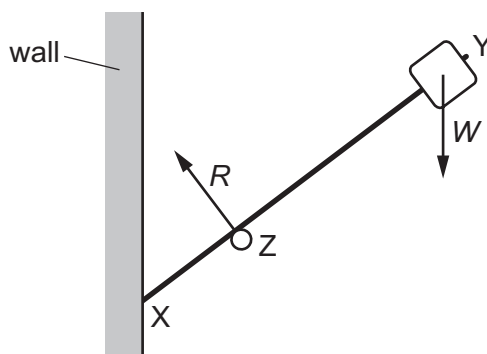
- 13 A non-uniform rod has a mass of 100 g and a length of 50 cm. It is supported by a chain at its midpoint. The rod is held in equilibrium by having a mass of 60 g suspended from its right-hand end, as shown.



The centre of gravity of the rod is a distance d from its left-hand end.

What is the value of d ?

- A 10 cm B 15 cm C 25 cm D 40 cm
- 14 A light rigid rod XY has an object of weight W fixed at one end. The rod is in equilibrium, resting on a support at Z and a vertical wall at X. The support exerts a force R on the rod as shown. The diagram shows the directions, but not the magnitudes, of the forces R and W .



What is the direction of the force on the rod at X?



- 15 Liquid Q has twice the density of liquid R.

At depth x in liquid R, the pressure due to the liquid is 4 kPa.

At which depth in liquid Q is the pressure due to the liquid 7 kPa?

- A $\frac{2x}{7}$ B $\frac{7x}{8}$ C $\frac{8x}{7}$ D $\frac{7x}{2}$