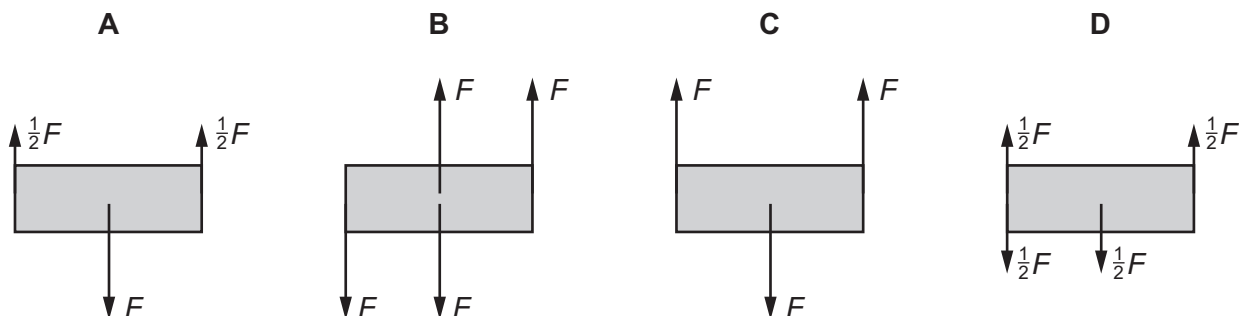
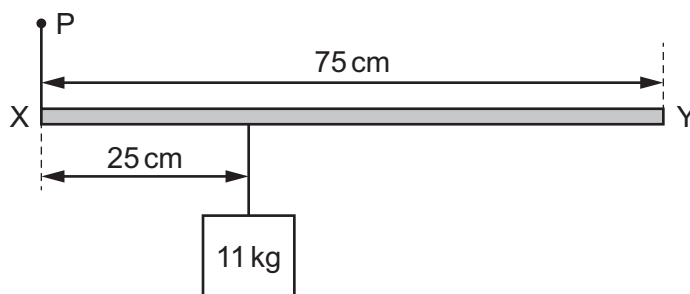


- 12 Forces are applied to a rigid object. The forces all act in the same plane.

In which diagram is the object in equilibrium?



- 13 A rigid rod XY has negligible mass and length 75 cm. The rod is suspended from a fixed point P by a string attached to end X. An object of mass 11 kg is suspended by a string that is attached to the rod at a distance of 25 cm from end X, as shown.



Which vertically upward force acting on end Y of the rod would hold the rod horizontally in equilibrium?

- A 3.7 N B 33 N C 36 N D 320 N
- 14 The density of water is 1.0 g cm^{-3} and the density of glycerine is 1.3 g cm^{-3} .

Water is added to a measuring cylinder containing 40 cm^3 of glycerine so that the density of the mixture is 1.1 g cm^{-3} . Assume that the mixing process does not change the total volume of the liquid.

What is the volume of water added?

- A 40 cm^3 B 44 cm^3 C 52 cm^3 D 80 cm^3