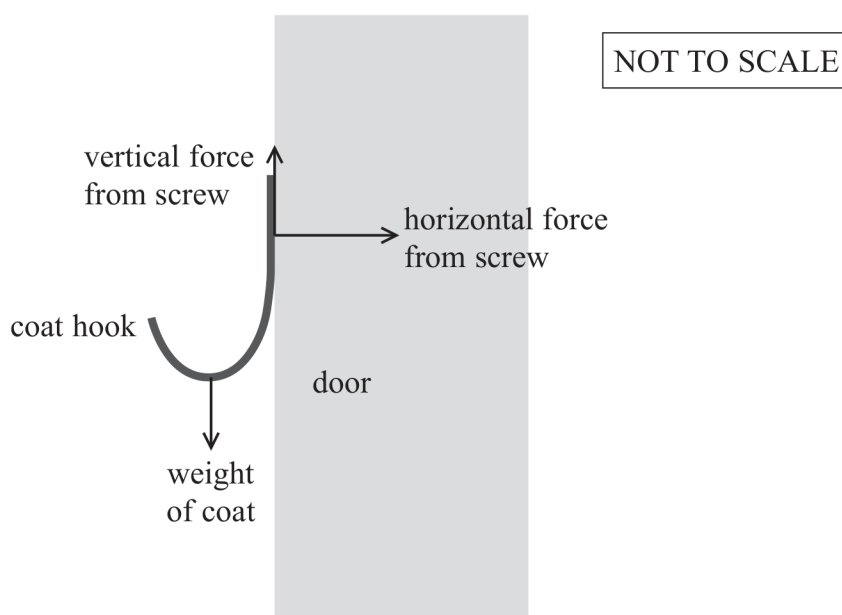


- 13 A coat hook is attached to a smooth door by a screw as shown.



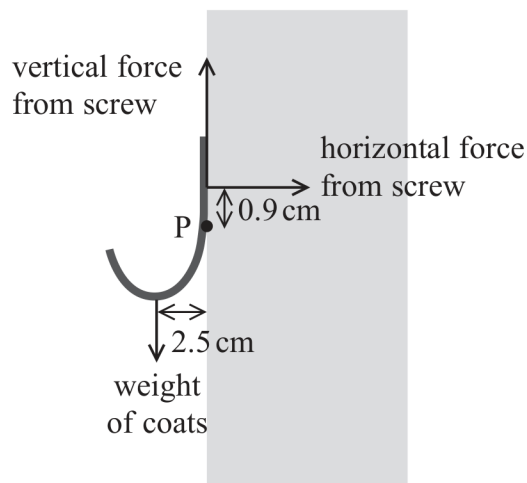
- (a) The diagram below shows three of the forces that act on the coat hook when a coat is hung from it. The weight of the coat hook may be neglected.



Add a labelled arrow to the diagram to show the additional force required for the coat hook to be in equilibrium.

(2)

- (b) If too many coats are hung on the coat hook, the hook will rotate and pull the screw out of the door. Point P is the position of the pivot as shown.



The maximum horizontal force from the screw is 150 N.

The mass of one coat is 2.6 kg.

Deduce whether a person could hang more than two of these coats from the hook.

(4)