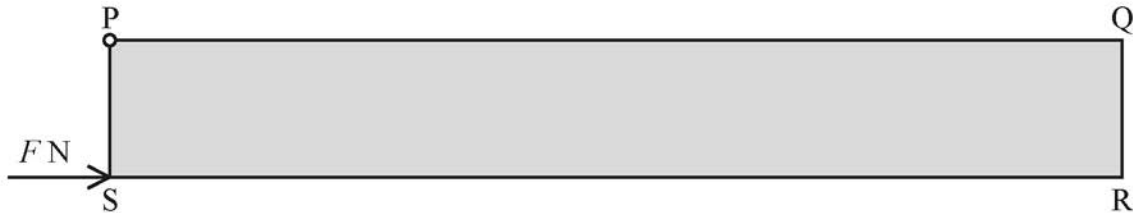**4** A ruler PQRS is a uniform rectangular lamina with mass 20 grams. The length of PQ is 30 cm and the length of PS is 4 cm. The ruler is attached at P to a smooth hinge and held with S vertically below P by a horizontal force of magnitude F N as shown in the diagram.

(a) Calculate the value of F. [3]

(b) Explain what would happen to the lamina if the force at S were removed. [1]