A small ring P of weight W is free to slide on a rough horizontal wire, one end of which is attached to a vertical wall at Q. The end A of a thin uniform rod AB of length $2a$ and weight $\frac{5}{2}W$ is freely hinged to the wall at the point A which is a distance a vertically below Q. A light elastic string of natural length $2a$ has one end attached to the ring P and the other end attached to the rod at B. The string is at right angles to the rod and A, B, P and Q lie in a vertical plane. The system is in limiting equilibrium with AB making an angle θ with the horizontal, where $\sin \theta = \frac{3}{5}$ (see diagram).

(i) Find the tension in the string in terms of W. [2]

(ii) Find the coefficient of friction between the ring and the wire. [2]

(iii) Find the magnitude of the resultant force on the rod at the hinge in terms of W. [3]

(iv) Find the modulus of elasticity of the string in terms of W. [3]