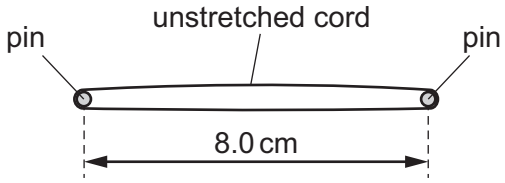
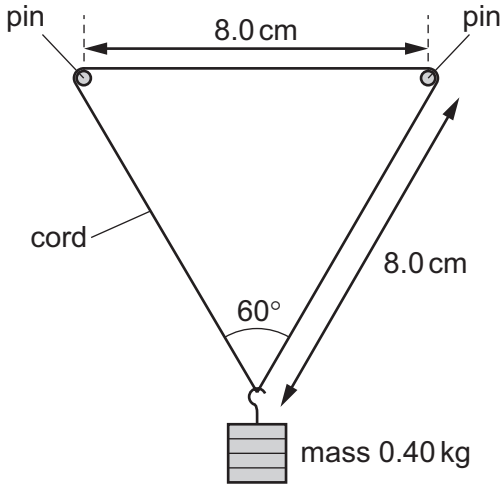
18 An elastic cord of unstretched total length 16.0 cm and cross-sectional area $2.0 \times 10^{-6}\,m^2$ is held horizontally by two smooth pins a distance 8.0 cm apart.

The cord obeys Hooke's law. A load of mass 0.40 kg is suspended centrally on the cord. The angle between the two sides of the cord supporting the load is 60°.



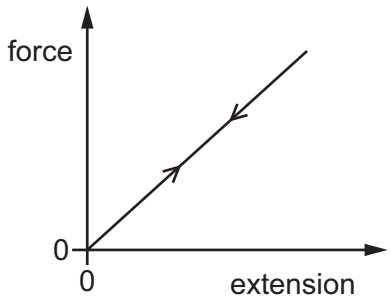


What is the Young modulus of the cord material?

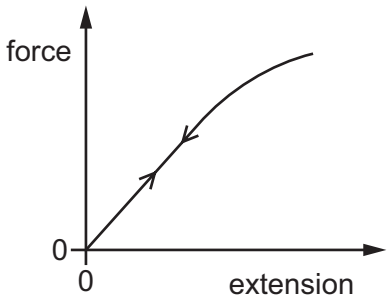
A $5.7 \times 10^5\,Pa$ **B** $1.1 \times 10^6\,Pa$ **C** $2.3 \times 10^6\,Pa$ **D** $3.9 \times 10^6\,Pa$

19 Which force–extension graph shows plastic deformation of a sample of material?

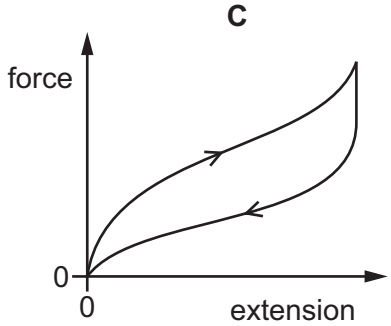
A



B



C



D