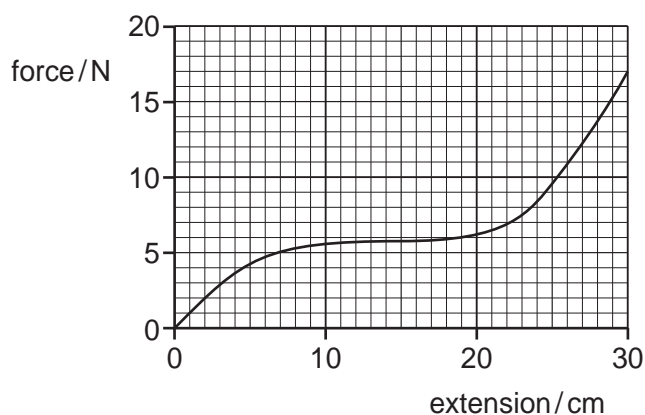


- 20** Two steel wires P and Q have lengths l and $2l$ respectively, and cross-sectional areas A and $\frac{A}{2}$ respectively. Both wires obey Hooke's law.

What is the ratio $\frac{\text{tension in P}}{\text{tension in Q}}$ when both wires are stretched to the same extension?

- A** $\frac{1}{4}$ **B** $\frac{1}{2}$ **C** $\frac{2}{1}$ **D** $\frac{4}{1}$

- 21** A rubber band is stretched by hanging weights on it and the force-extension graph is plotted from the results.



What is the best estimate of the strain energy stored in the rubber band when it is extended 30 cm?

- A** 2.0 J **B** 2.6 J **C** 5.1 J **D** 200 J

Space for working