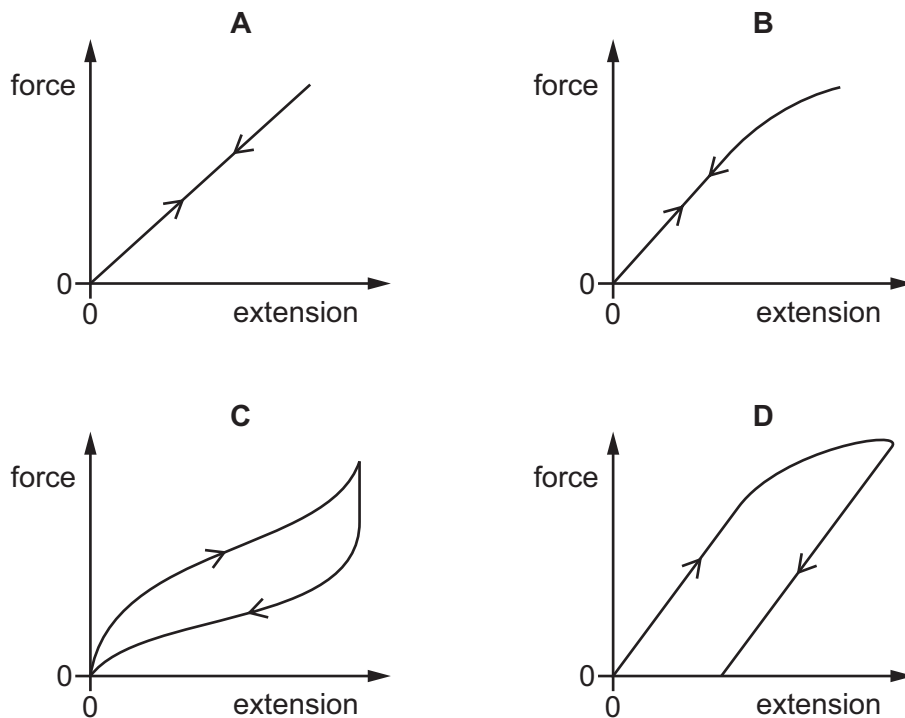


21 Which force-extension graph shows plastic deformation of a sample of material?



22 Four solid steel rods, each of length 2.0 m and cross-sectional area 250 mm^2 , equally support an object weighing 10 kN. The weight of the object causes the rods to contract by 0.10 mm.

What is the Young modulus of steel?

- A** $2.0 \times 10^8 \text{ Nm}^{-2}$
- B** $2.0 \times 10^{11} \text{ Nm}^{-2}$
- C** $8.0 \times 10^8 \text{ Nm}^{-2}$
- D** $8.0 \times 10^{11} \text{ Nm}^{-2}$

23 High-frequency sound waves with frequency 2.0 MHz travel with a speed of 2.0 km s^{-1} through a liquid.

What is the shortest distance between a compression and a rarefaction (expansion) in the liquid?

- A** 0.5 mm
- B** 1.0 mm
- C** 5.0 mm
- D** 10.0 mm