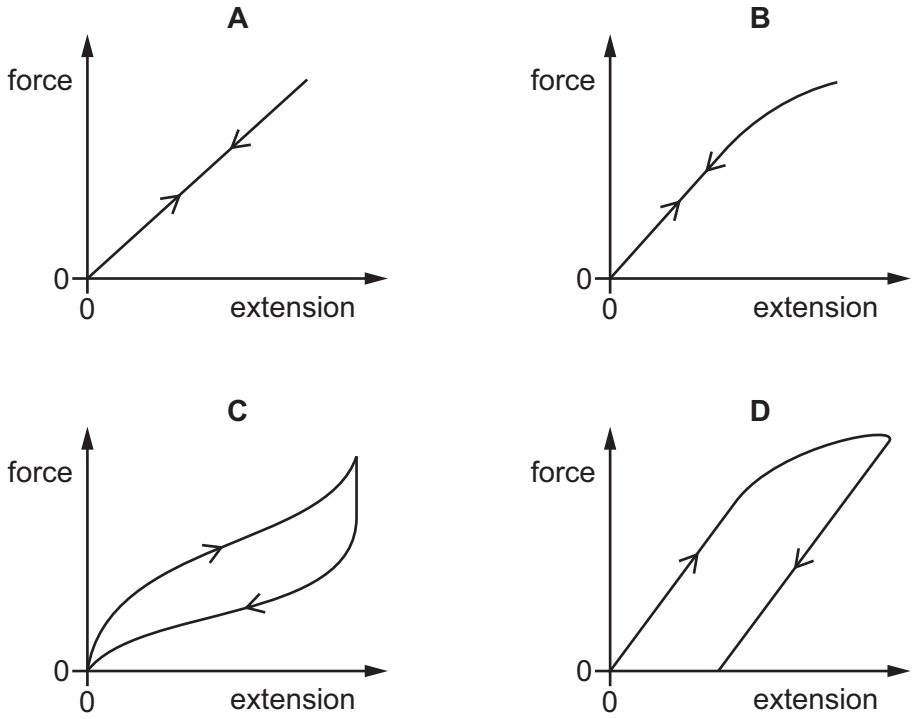
21 Which force-extension graph shows plastic deformation of a sample of material?



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 $2.0 \times 10^8\,N\,m^{-2}$

B $2.0 \times 10^{11}\,N\,m^{-2}$

C $8.0 \times 10^8\,N\,m^{-2}$

D $8.0 \times 10^{11}\,N\,m^{-2}$

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