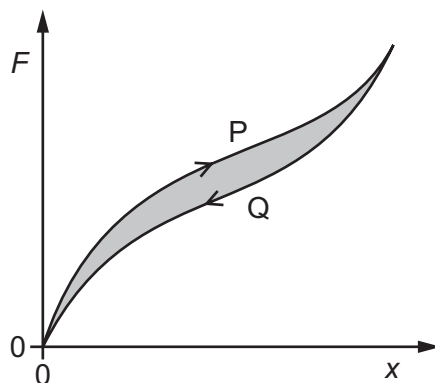


- 20** An unstretched rubber cord is stretched by a force. The force  $F$  is plotted against the extension  $x$ .  $F$  is slowly increased from zero, causing the cord to extend along path P.  $F$  is then reduced back to zero along path Q.



What is represented by the shaded area?

- A** the elastic energy stored in the rubber cord
  - B** the energy that causes plastic deformation
  - C** the energy dissipated as heat
  - D** the work done to extend the rubber cord
- 21** A guitar string vibrates to create a sound. The speed of the wave in the guitar string is always  $440 \text{ m s}^{-1}$ . The vibrating string creates a sound wave that moves in the air with a speed of  $330 \text{ m s}^{-1}$ .

Which graph shows the variation of frequency  $f$  with the wavelength  $\lambda$  for the waves in the string and in the air?

