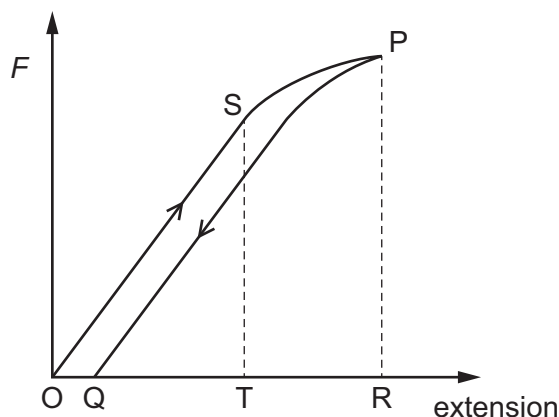


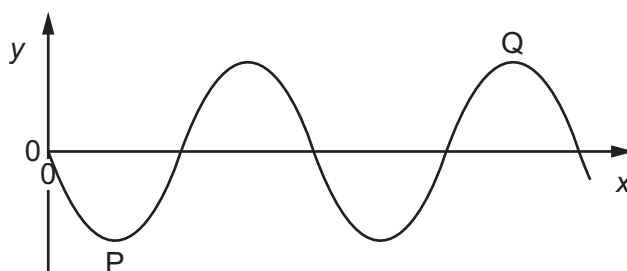
- 20** A wire is attached at one end to a fixed point. A tensile force  $F$  is applied to the other end of the wire, causing it to extend. This is shown on the graph by the line OSP.

The force  $F$  is then gradually reduced to zero and the wire contracts. This is shown on the graph by the line PQ.



Which area on the graph represents the work done by the wire as it contracts?

- A** OSTO      **B** OSPRO      **C** QPRQ      **D** OSPQO
- 21** The graph shows the variation of displacement  $y$  with distance  $x$  along a progressive wave at one instant in time.



What is the phase difference between points P and Q on the wave?

- A**  $90^\circ$       **B**  $270^\circ$       **C**  $540^\circ$       **D**  $630^\circ$
- 22** Wave-power generators take advantage of the energy that is transferred by the motion of waves across the surface of the oceans. The energy of a wave depends on its amplitude.

What is the correct definition of amplitude?

- A** the average amount of energy possessed by a wave  
**B** the difference in displacement between a peak and a trough  
**C** the maximum displacement of a point on the wave from equilibrium  
**D** the number of oscillations of a wave that occur per second