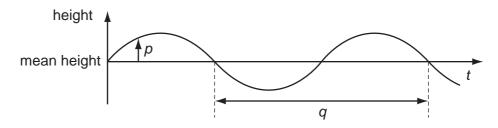
24 The Young modulus of steel is determined using a length of steel wire and is found to have the value *E*.

Another experiment is carried out using a wire of the same steel, but of twice the length and half the diameter.

What value is obtained for the Young modulus in the second experiment?

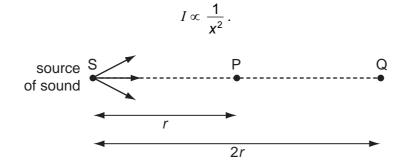
- A $\frac{1}{4}E$
- **B** $\frac{1}{2}E$
- C E
- **D** 2*E*
- **25** The graph shows how the height of a water surface at a point in a harbour varies with time *t* as waves pass the point.



What are p and q?

	р	q
Α	displacement	wavelength
В	displacement	period
С	amplitude	wavelength
D	amplitude	period

26 The intensity *I* of a sound at a point P is inversely proportional to the square of the distance *x* of P from the source of the sound. That is



Air molecules at P, a distance r from S, oscillate with amplitude 8.0 μ m.

Point Q is situated a distance 2r from S.

What is the amplitude of oscillation of air molecules at Q?

- **A** 1.4 μm
- **B** 2.0 μm
- **C** 2.8 μm
- $D 4.0 \mu m$