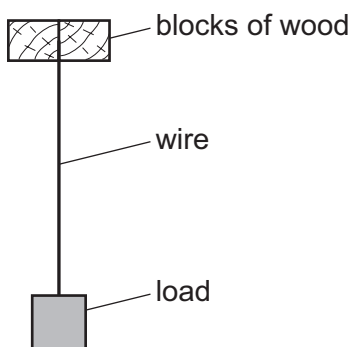


- 21 The diagram shows a wire of diameter  $D$  and length  $L$  that is firmly clamped at one end between two blocks of wood. A load is applied to the wire which causes it to extend by an amount  $x$ .



By how much would a wire of the same material, but of diameter  $2D$  and length  $3L$ , extend when the same load is applied?

- A**  $\frac{2}{3}x$                       **B**  $\frac{3}{4}x$                       **C**  $\frac{4}{3}x$                       **D**  $\frac{3}{2}x$
- 22 Which property of a metal wire depends on its Young modulus?
- A** ductility  
**B** elastic limit  
**C** spring constant  
**D** ultimate tensile stress

**Space for working**