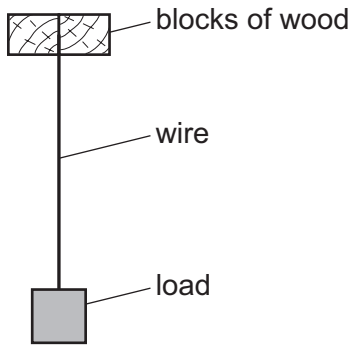
**24** The diagram shows a wire of diameter $D$ and length $L$ that is firmly clamped at one end between two blocks of wood. A load is applied to the wire which causes it to extend by an amount $x$.




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** $\frac{3}{2}x$

**25** What is represented by the gradient of a graph of force (vertical axis) against extension (horizontal axis)?

**A** elastic limit

**B** spring constant

**C** stress

**D** Young modulus

**Space for working**