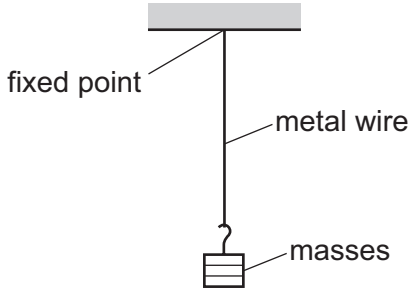
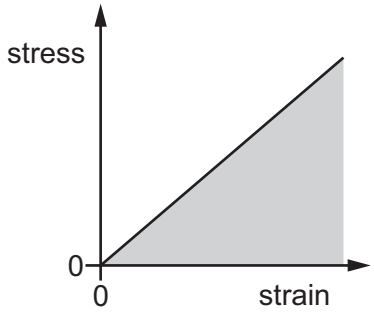
**22** A length of metal wire is attached to a fixed point and hangs vertically. Masses are then suspended from the wire. Assume that the cross-sectional area of the wire remains constant.




A stress–strain graph for the wire is plotted, as shown.




What is represented by the shaded area under the graph?

**A** strain energy in the wire

**B** $\dfrac{\text{strain energy in the wire}}{\text{cross-sectional area of the wire}}$

**C** $\dfrac{\text{strain energy in the wire}}{\text{original length of the wire}}$

**D** $\dfrac{\text{strain energy in the wire}}{\text{original volume of the wire}}$

**23** The table contains descriptions and examples of waves.

Which row is correct?

| | description of wave | example |
|---|---|---|
| **A** | oscillations are parallel to the direction of energy transfer | gamma-rays |
| **B** | oscillations are parallel to the direction of energy transfer | ultraviolet waves |
| **C** | oscillations are perpendicular to the direction of energy transfer | sound waves |
| **D** | oscillations are perpendicular to the direction of energy transfer | X-rays |