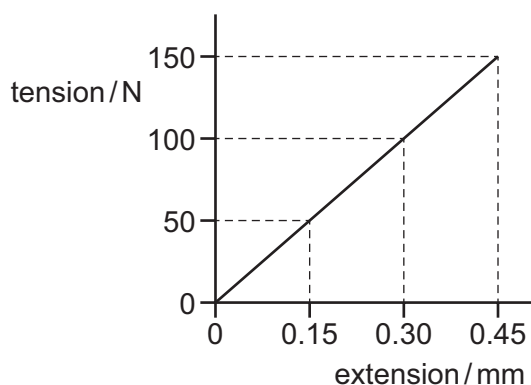
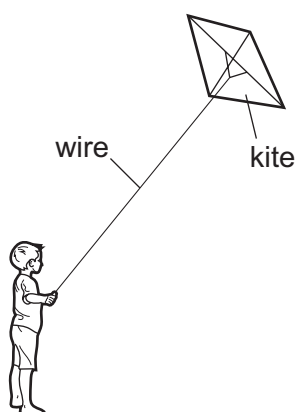


**18** What is meant by the spring constant of a spring?

- A** extension per unit force
- B**  $\frac{1}{2} \times \text{force} \times \text{extension}$
- C** force  $\times$  extension
- D** force per unit extension

**19** A child holds a thin metal wire that is attached to a kite. The graph shows how the extension of the wire varies with its tension.



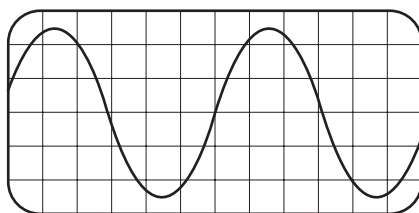
A gust of wind increases the tension from 100 N to 150 N.

What is the change in the elastic potential energy of the wire caused by the gust of wind?

- A** 3.8 mJ
- B** 19 mJ
- C** 34 mJ
- D** 38 mJ

**20** A microphone detects a sound wave. The microphone is connected to a cathode-ray oscilloscope (CRO).

The shape of the trace on the screen of the CRO is shown.



Which property of the sound wave can be determined by using only the measurement of a horizontal distance on the screen and the value of a control setting of the CRO?

- A** amplitude
- B** frequency
- C** speed
- D** wavelength