

- 18 A metal wire is stretched. The wire obeys Hooke's law.

Which quantity has a value that does **not** change?

- A extension
- B strain
- C stress
- D Young modulus

- 19 An object is stretched until it reaches the elastic limit.

Which statement must describe the stress on the object when it is at the elastic limit?

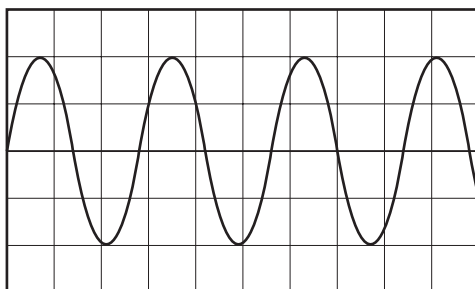
- A It is the maximum stress for which the object obeys Hooke's law.
- B It is the maximum stress that can be applied to the object before it has elastic deformation.
- C It is the maximum stress that can be applied to the object before it has plastic deformation.
- D It is the maximum stress the object can withstand before it breaks.

- 20 Which statement about progressive waves is correct?

- A They are always transverse waves.
- B They can exist in solids but not liquids.
- C They decrease in frequency as their speed increases.
- D They transfer energy away from their source.

- 21 A cathode-ray oscilloscope (CRO) is used to determine the frequency of a sound wave.

The diagram shows the waveform on the screen.



The time-base setting is 5.0 ms div^{-1} .

What is the best estimate of the frequency of the sound wave?

- A 50 Hz
- B 71 Hz
- C 100 Hz
- D 143 Hz