22 Which statement about transverse or longitudinal waves is **not** correct?

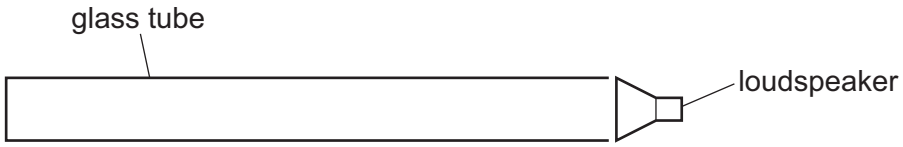
A Longitudinal waves can be used to demonstrate diffraction.

B Longitudinal waves can travel in a vacuum.

C Transverse waves can form stationary waves.

D Transverse waves can transfer energy.

23 A glass tube is closed at one end and has a loudspeaker at the other end.



A stationary wave is formed with a node at the closed end of the tube when the sound has frequency f_0. There are no other nodes.

The frequency of the sound is then slowly increased.

What is the frequency of the sound that produces the next stationary wave?

A $1.25f_0$ **B** $1.50f_0$ **C** $2.00f_0$ **D** $3.00f_0$

24 With which waves can the Doppler effect be observed?

A all waves including sound and light

B light waves only

C sound and light waves only

D sound waves only

25 Which radiation could consist of waves of wavelength 0.5 nm?

A γ-rays

B ultraviolet

C visible light

D X-rays