

**28** Which observation indicates that sound waves are longitudinal?

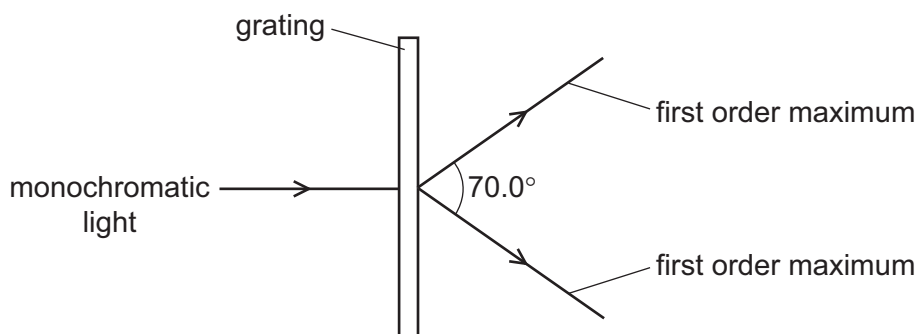
- A** Sound can be reflected from a solid surface.
- B** Sound cannot be polarised.
- C** Sound is diffracted around corners.
- D** Sound is refracted as it passes from hot air to cold air.

**29** To produce a stationary wave, two waves must travel in opposite directions through the same space.

Which statement about the properties of the two waves must also be true?

- A** The waves must have equal frequency, but a different speed and wavelength.
- B** The waves must have equal speed, but a different wavelength and frequency.
- C** The waves must have equal speed, frequency and wavelength.
- D** The waves must have equal wavelength, but a different speed and frequency.

**30** A diffraction grating is used to measure the wavelength of monochromatic light, as shown in the diagram.



The spacing of the slits in the grating is  $1.00 \times 10^{-6}$  m. The angle between the first order diffraction maxima is  $70.0^\circ$ .

What is the wavelength of the light?

- A** 287 nm      **B** 470 nm      **C** 574 nm      **D** 940 nm

**Space for working**