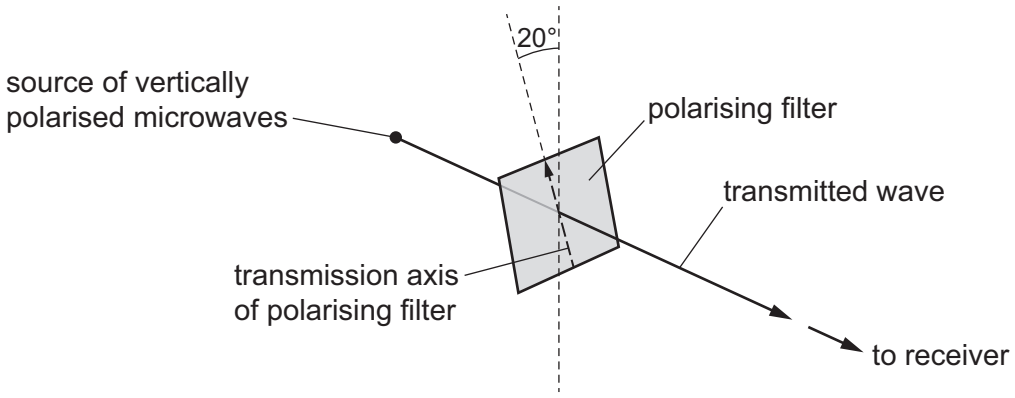
**24** Vertically polarised microwaves are emitted from a source. The microwaves are detected by a receiver that is connected to a cathode-ray oscilloscope (CRO). The waveform displayed on the screen of the CRO has an amplitude of 2.6 cm.

A metal wire grid that acts as a polarising filter is now placed between the source and the receiver. The filter is orientated so that the plane of polarisation of the transmitted wave is at an angle of 20° to the vertical.




The distance between the source and receiver is unchanged. The settings on the CRO are also unchanged.

What is now the amplitude of the waveform displayed on the screen of the CRO?

**A** 0.30 cm **B** 0.89 cm **C** 2.3 cm **D** 2.4 cm

**25** In an experiment, a stationary wave is formed on a string stretched horizontally between two fixed points.

Which statement about the experiment is correct?

**A** At certain times, the string between two nodes is horizontal with all points having zero displacement.

**B** Each point on the string between two antinodes has an oscillation of the same amplitude.

**C** The number of nodes is equal to the number of antinodes.

**D** Two adjacent antinodes oscillate in phase.

**26** A musical organ produces notes by blowing air into a set of pipes that are open at one end and closed at the other.

The speed of sound in the air in the pipes is 320 $m\,s^{-1}$.

What is the lowest frequency of sound produced by a pipe of length 10 m?

**A** 4 Hz **B** 8 Hz **C** 16 Hz **D** 32 Hz