25 A musical instrument is made using a long tube with a mouthpiece at one end. The other end is open and flared, as shown.

A musician maintains stationary sound waves with a node at the mouthpiece and an antinode at the other end. The lowest frequency of sound that the instrument can produce is 92 Hz.

Which different frequencies of sound can be produced by the instrument?

A 92 Hz, 138 Hz, 184 Hz, 230 Hz

B 92 Hz, 184 Hz, 276 Hz, 368 Hz

C 92 Hz, 276 Hz, 460 Hz, 644 Hz

D 92 Hz, 276 Hz, 828 Hz, 1288 Hz

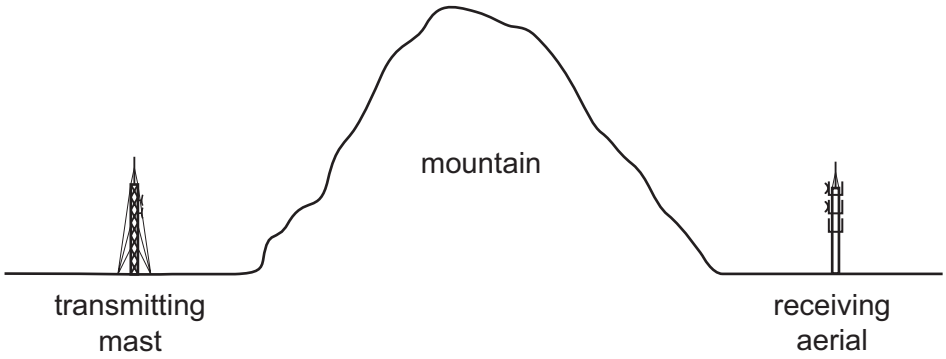
26 Two waves of equal frequency and amplitude are travelling in opposite directions along a stretched string. When they meet, they form a stationary wave with three nodes and two antinodes.

The frequency of both waves is doubled and a new stationary wave is formed.

How many antinodes are there in the new stationary wave?

A 1 **B** 2 **C** 3 **D** 4

27 A transmitting mast sends out microwaves of wavelength 1.5 cm and radio waves of wavelength 1.5 km.



NOT TO SCALE

A receiving aerial behind a mountain can detect the radio waves but not the microwaves.

What is the reason for this?

A The radio waves are coherent but the microwaves are not.

B The radio waves are diffracted around the mountain but the microwaves are not.

C The radio waves are reflected by the mountain but the microwaves are not.

D The radio waves travel at the speed of light but the microwaves do not.