

- 29** A wire is fixed at both ends and is vibrated by a source of frequency f . A stationary wave is formed on the wire with a total of two antinodes.

The frequency of the source is increased to $3f$ and a new stationary wave is formed.

What is the total number of antinodes on the new wave?

- A** 4 **B** 5 **C** 6 **D** 9

A-Level Physics: **s25 11**

- 31** A hollow tube is closed at one end and open at the other.

A stationary sound wave of the lowest possible frequency, 820 Hz, is produced in the tube.

The speed of sound in air is 330 m s^{-1} .

What is the length of the tube?

- A** 10 cm **B** 20 cm **C** 40 cm **D** 160 cm

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- 30** Two waves meet.

What is **not** a necessary condition for the waves to produce a stationary wave?

- A** They must be of the same type.
B They must have the same period.
C They must have the same wavelength.
D They must travel in the same direction.