

23 The amplitude of a wave is A and its intensity is I .

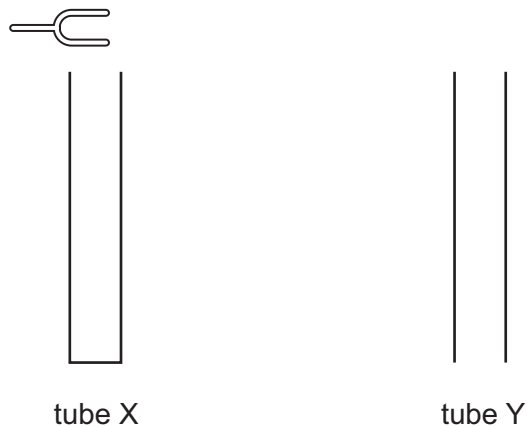
Which amplitude is necessary for the intensity to be doubled to $2I$?

- A A^2 B \sqrt{A} C $\sqrt{2} A$ D $2A$

24 Which value is a possible wavelength for radiation in the ultra-violet region of the electromagnetic spectrum?

- A $3 \times 10^{-2} \text{ m}$ B $3 \times 10^{-5} \text{ m}$ C $3 \times 10^{-8} \text{ m}$ D $3 \times 10^{-10} \text{ m}$

25 The diagram shows two tubes.



The tubes are identical except tube X is closed at its lower end while tube Y is open at its lower end. Both tubes have open upper ends.

A tuning fork placed above tube X causes resonance of the air at frequency f . No resonance is found at any **lower** frequency than f with tube X.

Which tuning fork will produce resonance when placed just above tube Y?

- A a fork of frequency $\frac{f}{2}$
- B a fork of frequency $\frac{2f}{3}$
- C a fork of frequency $\frac{3f}{2}$
- D a fork of frequency $2f$

Space for working