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

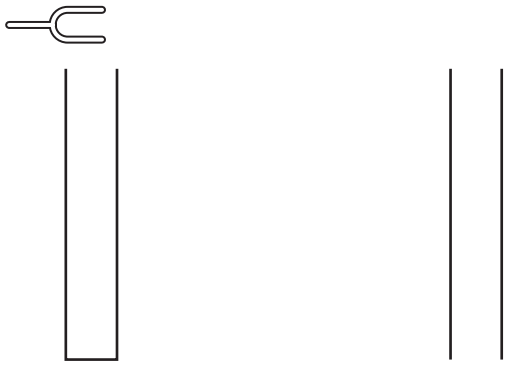
Which amplitude is necessary for the intensity to be doubled to $2I$?

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 3×10^{-2} m **B** 3×10^{-5} m **C** 3×10^{-8} m **D** 3×10^{-10} m

25 The diagram shows two tubes.



tube X tube Y

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