24 Two springs P and Q both obey Hooke's law. They have spring constants $2k$ and k respectively.

The springs are stretched, separately, by a force that is gradually increased from zero up to a certain maximum value, the same for each spring. The work done in stretching spring P is W_P, and the work done in stretching spring Q is W_Q.

How is W_P related to W_Q?

A $W_P = \frac{1}{4}W_Q$ **B** $W_P = \frac{1}{2}W_Q$ **C** $W_P = 2W_Q$ **D** $W_P = 4W_Q$

25 Which value is a possible wavelength for radiation in the microwave region of the electromagnetic spectrum?

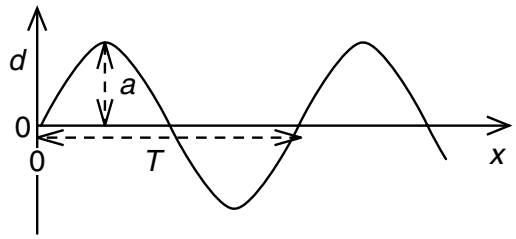
A 3×10^{-2} m **B** 3×10^{-5} m **C** 3×10^{-8} m **D** 3×10^{-10} m

26 The four graphs represent a progressive wave on a stretched string. Graphs **A** and **B** show how the displacement d varies with distance x along the string at one instant. Graphs **C** and **D** show how the displacement d varies with time t at a particular value of x.

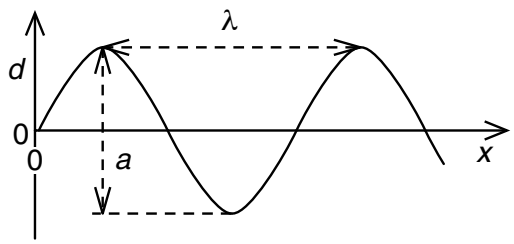
The labels on the graphs are intended to show the wavelength λ, the period T, and the amplitude a of the wave, but only one graph is correctly labelled.

Which graph is correctly labelled?

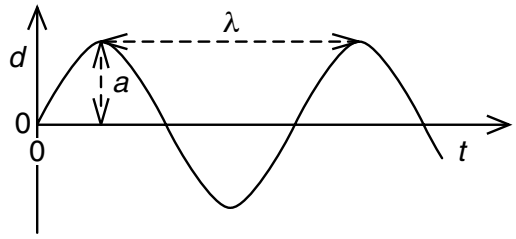
A



B



C



D