You must convert/determine (f) in Hz
1 m = 10^{-3} s

(X) = Not needed

SAQ

3 From the displacement against time graph shown in Figure 5.8, determine the amplitude, period and frequency of the oscillations represented.

Hint

Answer

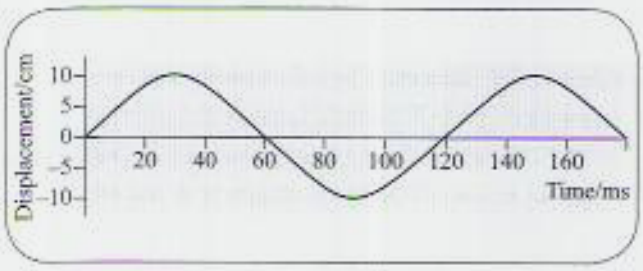

Figure 5.8 A displacement against time graph for an oscillator.

Phase

The term **phase** describes the point that an oscillating mass has reached within the complete cycle of an oscillation. It is often important to describe the **phase difference** between two oscillations. The graph of Figure 5.9a shows two oscillations which are identical except for their phase difference. They are out of step with one another. In this example, they have a phase difference of one-quarter of an oscillation. Phase difference can be measured as a fraction of an oscillation, in degrees or in radians (see Worked example 1).

SAQ

4 a Figure 5.9b shows two oscillations which are out of phase. By what fraction of an oscillation are they out of phase?

b Why would it not make sense to ask the same question about Figure 5.9c?

Answer

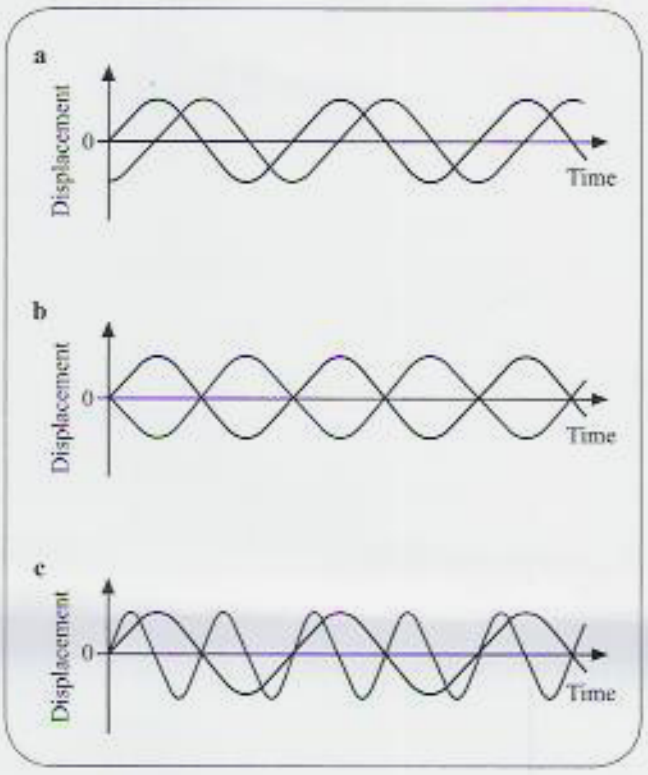

Figure 5.9 Illustrating the idea of phase difference.

(3) is needed
(4) Not needed