

- 7 (a) (i) Explain what is meant by a *progressive transverse wave*.

progressive:

.....
transverse:

.....
..... [2]

- (ii) Define frequency.

.....
..... [1]

- (b) The variation with distance x of displacement y for a transverse wave is shown in Fig. 7.1.

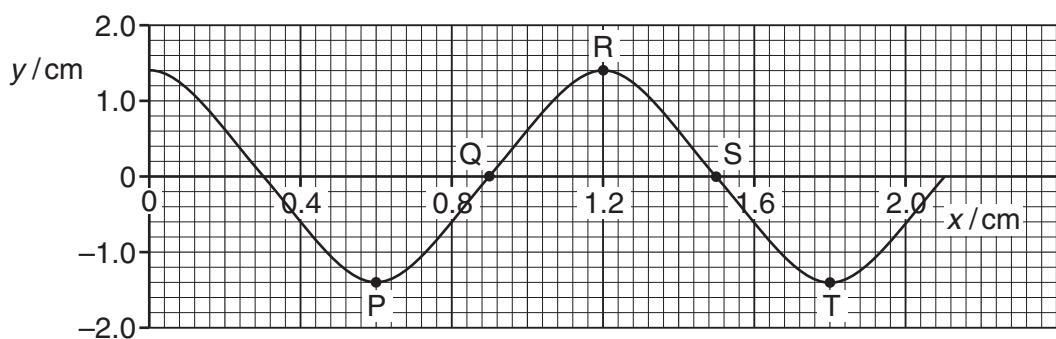


Fig. 7.1

On Fig. 7.1, five points are labelled.

Use Fig. 7.1 to state any two points having a phase difference of

- (i) zero,

..... [1]

- (ii) 270° .

..... [1]

- (c) The frequency of the wave in (b) is 15 Hz.

Calculate the speed of the wave in (b).

$$\text{speed} = \dots \text{ ms}^{-1} [3]$$

- (d) Two waves of the same frequency have amplitudes 1.4 cm and 2.1 cm.

Calculate the ratio

$$\frac{\text{intensity of wave of amplitude 1.4 cm}}{\text{intensity of wave of amplitude 2.1 cm}} .$$

ratio = [2]

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