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Gateway Science Physics A

J249/01 Physics A P1-P4 and P9 (Foundation Tier)

Question Set 17

17 Two students study the motion of a model train on a track.

They need distance and time measurements to calculate speed.

(a) Write down an instrument they could use to measure the following.

(i)

Distance: .....

[1]

(ii)

Time: .....

[1]

(b) The train travels for 45 seconds with a speed of 2 m / s.

Calculate the distance travelled by the train.

Show your working.

.

Answer = ... m

[4]

(c) The maximum speed of the train is 5 m / s.

Its maximum velocity is also 5 m / s.

(i) What is the same about the maximum speed and velocity?

.....

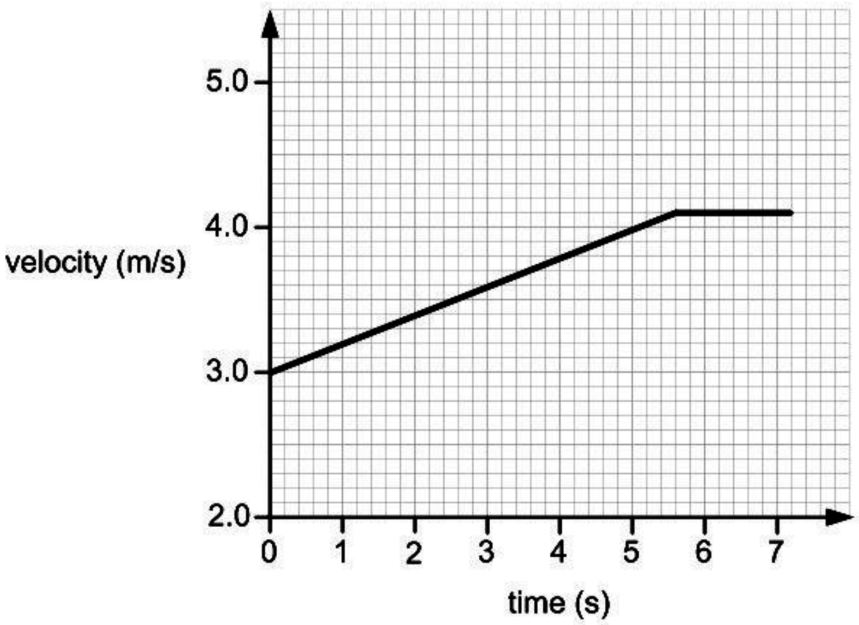
[1]

(ii) What may be different about the maximum speed and velocity?

.....

[1]

(d) The train accelerates and its journey is shown in the graph below.



Use data from the graph to calculate the acceleration.

Show your working.

.

Answer = ... m/s^2

[4]

Total Marks for Question Set 17: 12

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