

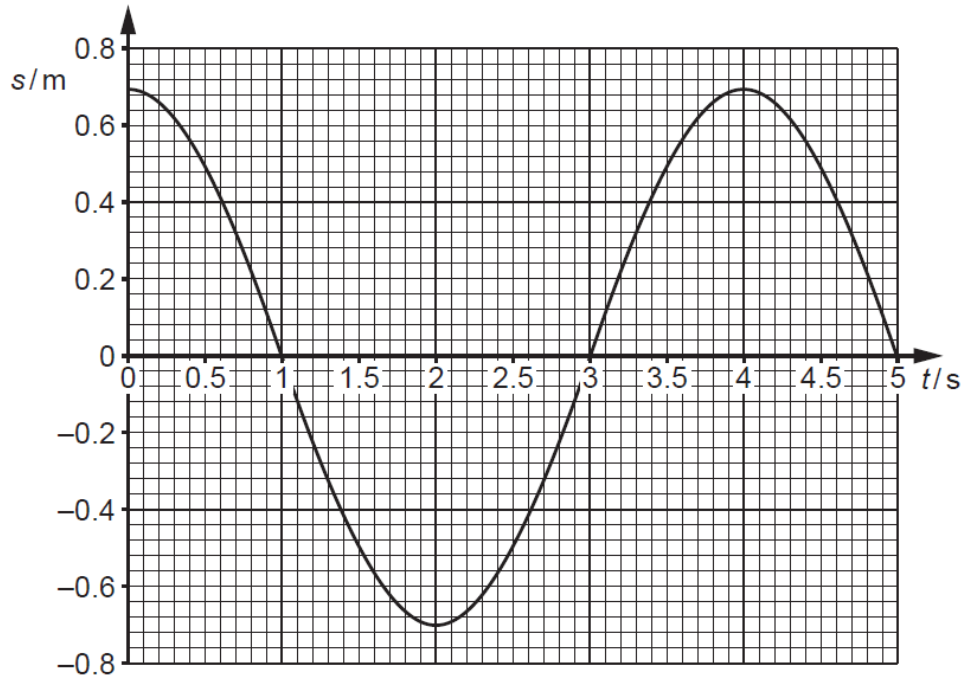
## **A level Physics B**

**H557/01** Fundamentals of physics

### **Question Set 12**

1. (a)

**Fig. 1** shows a displacement  $s$  against time  $t$  graph for the motion of a swing in simple harmonic motion.



**Fig. 1**

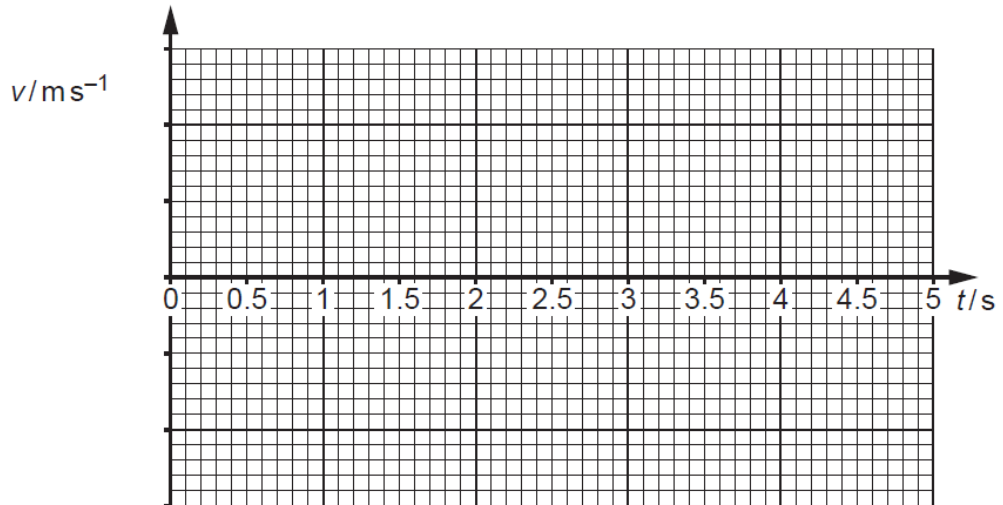
Use **Fig. 1** to find the magnitude of the maximum velocity of the swing. Make your method clear.

velocity = ..... m s<sup>-1</sup>

[2]

(b)

On **Fig. 2** scale the  $y$ -axis suitably and draw the velocity  $v$  against time  $t$  graph for this motion.



**Fig. 2**

[2]

- (c) Show that the length of the simple pendulum having the same time period as the swing in **Fig.1** is less than 4.0 m.

[2]

**Total Marks for Question Set: 6**

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