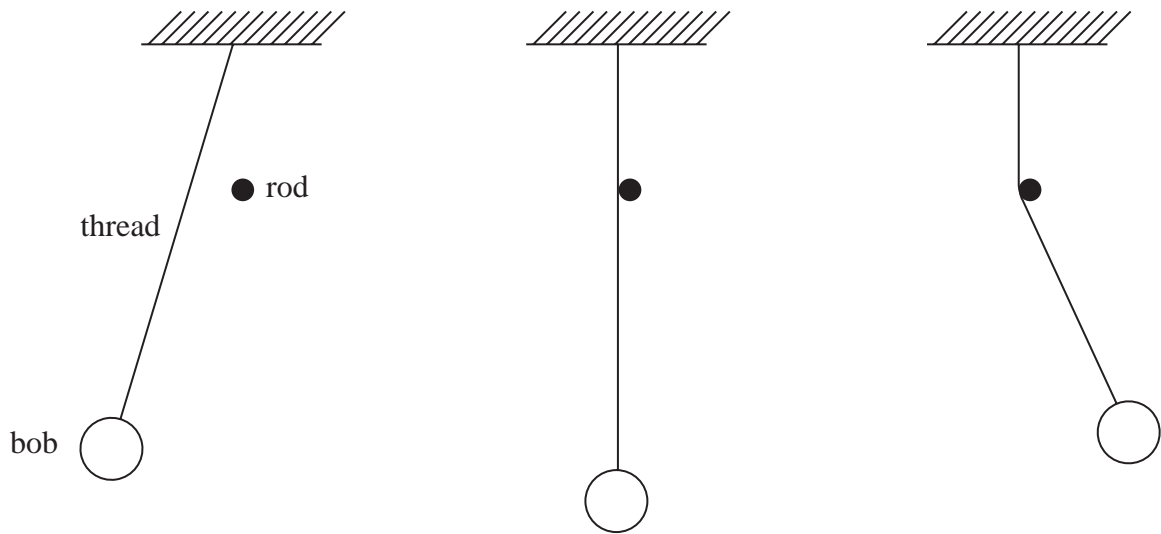


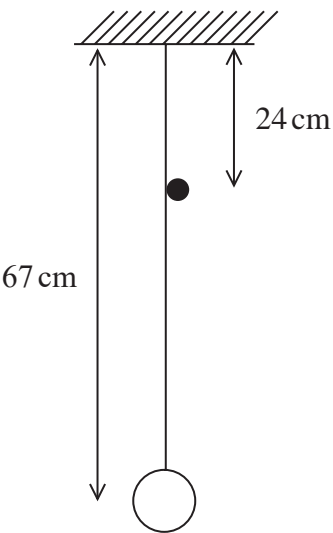
**11** A simple pendulum consisting of a thread and a bob is set up next to a horizontal rod.

The bob is displaced to the left and released. When the bob reaches the equilibrium position the thread strikes the horizontal rod. For half of the cycle, only the lower part of the pendulum moves.

The diagram shows the swing of the pendulum.



The diagram below shows the dimensions of the pendulum.



Determine the frequency of the oscillations of the pendulum.

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Frequency = .....

**(Total for Question 11 = 4 marks)**