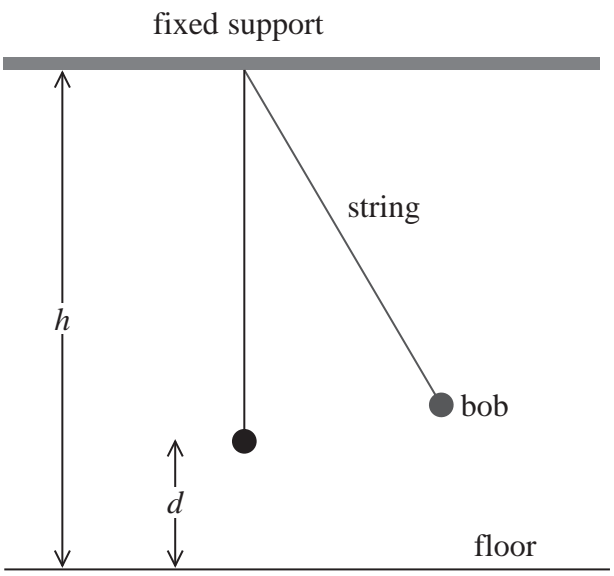


A student carried out an experiment with a pendulum hung from a fixed support. The fixed support was a distance h above floor level as shown.



As the student was unable to measure the length of the pendulum directly, she measured the distance d from the bob to the floor.

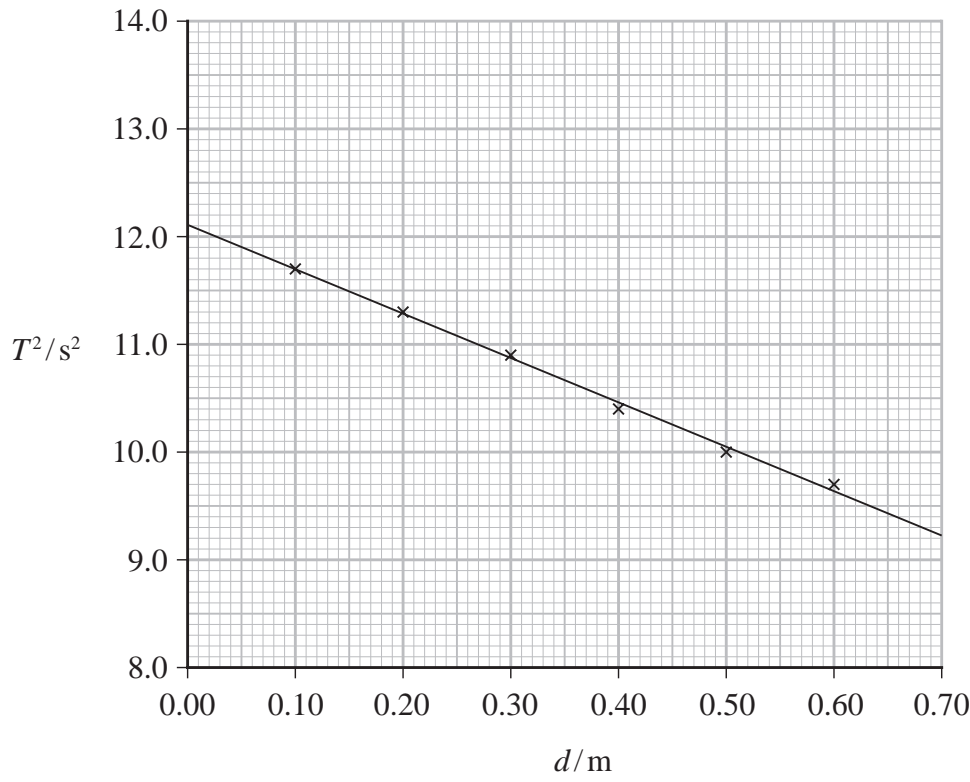
(a) To determine the period T of the pendulum, the student used the following method:

- release the bob from its highest position and start a stopwatch
- stop the stopwatch when the bob reaches the same position again.

Criticise the student’s method for measuring the period.

(2)

(b) The student used her data to plot a graph of T^2 against d as shown below.



Determine a value for the acceleration due to gravity g .

(5)

$g =$