Marks

Question 16 (continued)

(a) Outline TWO changes that could be made to the experimental procedure that would improve its accuracy. **2**

Repeat the experiment, making sure you accurately measure the period. Decide on an angular displacement from the beginning with everyone using the same one.

(b) Compare Kim's and Ali's methods of calculating g and identify the better approach. **3**

By using the table, Kim was able to get an accurate mean value for g. whereas by using a line of best fit, Ali may have obtained a less accurate result as her line of best fit may be incorrect along with her graph measurements.

(c) Calculate the value of g from the line of best fit on Ali's graph. **3**

0.15/0.04 = 3.75

$T = 2\pi\sqrt{\frac{L}{g}}$ ×g ×g ×T

$g \times T = 2\pi\sqrt{L}$ ÷T

$g = 2\pi\sqrt{\frac{L}{T}}$

$g = 2\pi\sqrt{3.75}$

$= 12.16733603$

∴ $g = 12.2\ ms^{-2}$ (1 d.p.)

End of Question 16