Question 16

Marks

Question 16 (continued)

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

• Release the mass and measure the time for 10 period and divide the time by 10 to get one period (T)
• Repeat one length of string several times to get best result and do the next string

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

Kim's method is using the formula to find g, and Ali's method is looking at the gradient to find g. Both method are since Kim uses mean value to calculate g as Ali just looking at trend. Kim's method is better to get better g.

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

$T = 2\pi\sqrt{\frac{L}{g}}$ $T^2 = 1$ $L = 0.24$

$T^2 = \frac{4\pi^2 L}{g}$ $\frac{T^2}{L} = \frac{4\pi^2}{g}$

$\frac{1}{0.24} = \frac{4\pi^2}{g}$ $g = 4\pi^2 \times 0.24 = 9.47$

$\therefore g = 9.47 ms^{-2}$

End of Question 16