

Question 16 (continued)

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

Kim and Ali could have performed the experiment a couple more times (i.e.) each length of the string in increments could have been done 3 or 4 times and an average could have been determined to ensure accuracy. Also they could have done the experiment using different weights.

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

As Kim used the relationship $T = 2\pi\sqrt{\frac{l}{g}}$ and Ali used his graph of results to obtain a mean ^{value} for g , Ali's approach is better, in the sense that he plotted a graph of his results, and drew a line of best fit; this demonstrates the constant value, whereas Kim's approach did not include a graph and merely relied on calculations.

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

$$\frac{\text{rise}}{\text{run}} = \frac{0.69 - 0.4}{0.16 - 0.10} = \frac{0.29}{0.06} = 4.8\bar{3}$$

End of Question 16