2. **In this question you must show all stages of your working.**

Solutions relying entirely on calculator technology are not acceptable.

Use the standard results for $\sum_{r=1}^{n} r$ and $\sum_{r=1}^{n} r^2$ to show that for all positive integers n

$$\sum_{r=1}^{n} (7r - 5)^2 = \frac{n}{6}(7n + 1)(An + B)$$

where A and B are integers to be determined.

(6)

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Question 2 continued

(Total for Question 2 is 6 marks)