Question	Scheme	Marks
2.	$(7r-5)^2 = 49r^2 - 70r + 25$	**B1**
	$\sum_{r=1}^{n}(7r-5)^2 = 49\sum_{r=1}^{n}r^2 - 70\sum_{r=1}^{n}r + \sum_{r=1}^{n}25$ $= 49\times\underline{\frac{n}{6}(n+1)(2n+1)} - 70\times\underline{\frac{n}{2}(n+1)} + 25\times\underline{n}$	**M1** **A1ft**
	$= \frac{n}{6}\left(49(2n^2+3n+1) - 210(n+1) + 150\right)$	**M1**
	$= \frac{n}{6}\left(98n^2 - 63n - 11\right)$	**A1**
	$= \frac{n(7n+1)(14n-11)}{6}$	**A1**
		(6)
		(6 marks)

Notes:

B1: Correct expansion.

M1: Attempts the summations with at least two of the underlined formulae correct.

A1ft: Fully correct application of all three summations. Follow through on their expansion as long as there are 3 terms.

M1: Attempts to factor out at least the factor of *n* from their **three term** expansion – must have a common factor of *n* throughout to be able to score this mark which must be extracted from each term. (If the last term is +25, it is M0.) Allow if there are minor slips but the process must be correct.

Alternatively allow this mark for an attempt to expand $\frac{n}{6}(7n+1)\left(An+B\right)$ and compare coefficients with their expanded equation.

A1: Gathers terms appropriately and achieves the correct quadratic. In the alternative approach allow for $A = 14$ and $B = -11$ stated from their comparison.

A1cso: Correct answer from correct work. Any values found from the comparison approach must be substituted back in to achieve the result. Note from a correct unsimplified quadratic to correct answer, A0A1 can be awarded.