Advanced Higher Maths
SQA 2016 Paper
Question 5

Prove **by induction** that

$$\sum_{r=1}^{n} r(3r-1) = n^2(n+1), \qquad \forall n \in \mathbb{N}. \qquad 4$$

Answer:

Proof. Establish base case when $n = 1$, assume true for $n = k$, prove true for $n = k + 1$ and communicate result correctly. See marking instructions for details.