

Advanced Higher Maths
SQA 2016 Exemplar
Question 12

Prove by induction that, for all positive integers n ,

$$\sum_{r=1}^n \frac{1}{r(r+1)} = 1 - \frac{1}{n+1}.$$

5

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.