

Notes

B1: Deduces the correct value of the **first term** or the common ratio. The correct first term can be seen as part of them writing down the sequence but must be the **first term**.

M1: Recognises that the series is infinite geometric and applies the sum to infinity GP formula with $a = \frac{9}{16}$ and $r = \pm \frac{3}{4}$

A1*: Correct proof

Alternative 1:

B1: Deduces the correct value for the sum to infinity (starting at $n = 1$) or the common ratio

M1: Calculates the required value by subtracting the first term from their sum to infinity

A1*: Correct proof

Alternative 2:

B1: Deduces the correct value of the **first term** or the common ratio.

M1: Splits the series into “odds” and “evens”, attempts the sum of both parts and calculates the required value by adding both sums

A1*: Correct proof

Alternative 3:

B1: Deduces the correct value of the **first term**

M1: A complete method by taking out the first term, expresses the rhs in terms of the original sum and rearranges for “S”

A1*: Correct proof