

Question			Answer	Marks	AO	Guidance
3	(a)		$\frac{1}{1} + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} = \frac{25}{12}$	B1 [1]	1.1	Must be in lowest terms. Allow $2\frac{1}{12}$ BC
3	(b)		Sum = $\sum_{r=1}^5 (2r - 1)$ or $\sum_{r=0}^4 (2r + 1)$	M1 A1 [2]	3.1a 2.5	Correct function to generate odd numbers. Condone no brackets Correct limits for their expression using sigma notation Brackets must be seen. Do not allow $\sum_{r=1}^5 (r + (r - 1))$, $\sum_{r=1}^5 (2n - 1)$ or similar
3	(c)		The series is increasing, so the sum of n terms forms a divergent sequence so there is not well defined sum to infinity	B1 [1]	2.4	Explains in technical language or otherwise that the sum gets bigger the more terms added in so the sum to infinity is not a number. See appendix

Exemplar responses for Q3(c)

Response	Mark
As it is a divergent sequence [and ever increases]	B1
The sequence is not convergent	B1
The n th term value is constantly increasing	B1
<i>It</i> is constantly increasing	B0
It could go on indefinitely	B0
Because we can't sum to infinity arithmetic sequences	B0
It is an arithmetic sequence	B0
The sequence is not geometric sequence so the sum to infinity is infinity	B0