Question	Scheme	Marks	AOs
3(a)(i)	$a_1 = 3,\ a_2 = 5,\ a_3 = 3\ ...$	B1	1.1b
(ii)	2	B1	1.1b
		(2)	
(b)	$\sum_{n=1}^{85} a_n = 42\times(3+5)+3$ o.e.	M1	3.1a
	$= 339$	A1	1.1b
		(2)	
			(4 marks)

Notes:

(a)(i) Mark (a)(i) and (a)(ii) together.

B1: States the values of at least $a_2 = 5$ and $a_3 = 3$. This is sufficient but if more terms are given they must be correct. There is no need to see e.g. $a_2 = ...,\ a_3 = ...$ just look for values.

Allow an algebraic approach e.g. $a_{n+1} = 8 - a_n,\ a_{n+2} = 8 - (8 - a_n) = a_n$

A conclusion is **not** needed.

(a)(ii)

B1: States that the order of the periodic sequence is 2

Allow "second order", "it repeats every 2 numbers" or equivalent statements that convey the idea of the period being 2.

Note that ±2 is B0

(b)

M1: Attempts a **correct** method to find $\sum_{n=1}^{85} a_n$

For example $\sum_{n=1}^{85} a_n = 42\times(3+5)+3$, $\sum_{n=1}^{85} a_n = \frac{84}{2}\times 3 + 42\times 5 + 3$ or $\sum_{n=1}^{85} a_n = 43\times(3+5) - 5$

or $\sum_{n=1}^{85} a_n = 43\times 3 + 42\times 5$ or $\sum_{n=1}^{85} a_n = \frac{85}{2}\times 8 - 1$

There may be other methods e.g. "Chunking": $5\times(3 + 5) = 40$, $40 \times 8 = 320$, $320 + 3\times3 + 2\times5 = 339$

A1: 339. Correct answer only scores both marks.

Attempts to use an AP formula score M0