Question Number	Scheme	Marks
1.	$r(r+3)=r^2+3r \quad \text{so} \quad \sum_{r=1}^{n} r(r+3)=\sum_{r=1}^{n} r^2+3\sum_{r=1}^{n} r$ $=\frac{n}{6}(n+1)(2n+1)+3\frac{n}{2}(n+1)$	M1A1
	$=\frac{n}{6}(n+1)[2n+1+9]$	dM1
	$\left(=\frac{n}{6}(n+1)[2n+10]\right)=\frac{n}{3}(n+1)(n+5)$ or $a = 3$ and $b = 5$	A1
		(4)
		Total 4

Notes

M1: Attempts to expand and attempts to substitute **at least one <u>correct</u>** standard formula into their resulting expression.

A1: Correct expression (or equivalent)

dM1: Attempt to factorise at least $n(n + 1)$ **having attempted to substitute <u>both correct</u> standard formulae**. May be done in stages

Dependent on the previous M mark.

A1: Correct completion with no errors and must be in terms of n

Note: Condone work in terms of r for all but the final mark.

Attempts that use induction would generally score no marks, but if there are any cases you are unsure about please send to review