Question number	Scheme	Marks
6 (a)	$a = 4\times1-3=1, \quad (d=4)$	B1
	$\sum_{r=1}^{n} 4r-3 = \frac{n}{2}\left(2\times1+(n-1)4\right) = n(2n-1)^*$	M1A1 [3]
(b)	$n(2n-1)>1000 \Rightarrow 2n^2-n-1000>0$	M1
	$\frac{-(-1)\pm\sqrt{(-1)^2-4\times2\times(-1000)}}{2\times2} \Rightarrow n>22.612... \Rightarrow n=23$	M1A1 [3]
(c)	$3t_{(n+7)}+18 = S_{(n+4)}$	
	$\Rightarrow 3\left[4(n+7)-3\right]+18=(n+4)\left[2(n+4)-1\right]$	M1
	$\Rightarrow 2n^2+3n-65=0$	A1
	$2n^2+3n-65=(2n+13)(n-5)=0 \Rightarrow n=5$	depM1A1 [4]
		Total 10 marks

(a)	
B1	$a=1$
M1	Use of $S=\frac{n}{2}(2a+(n-1)d)$ or $S=\frac{n}{2}(a+L)$
A1	Obtains the **given** expression
(b)	
M1	Sets up a 3 term quadratic from the given information (Condone = rather than >)
M1	Solve their 3 term quadratic (May be implied by 22.6 …)
A1	$n = 23$
(c)	
M1	Substitution of $n + 7$ and $n + 4$
A1	A correct 3 term quadratic
depM1	Solve their 3 term quadratic (Dependent on previous M mark)
A1	$n = 5$ (must reject other answer if offered)