Question	Answer	Marks	Guidance
10(a)(i)	$\frac{n}{2}(2x+1)(3n-1)$	**2**	**B1** for $\frac{n}{2}\left(2(2x+1)+3(n-1)(2x+1)\right)$ or $\frac{n}{2}\left(2(2x+1)+(6x+3)(n-1)\right)$ oe
10(a)(ii)	$\frac{n}{2}(2x+1)(3n-1)=(54n+37)(2x+1)$ $3n^2-109n-74=0$	**M1**	For equating *their* answer to **(a)** to $(54n+37)(2x+1)$ and attempt to solve a 3-term quadratic equation in n to obtain n = ...
	37 only	**A1**	
10(a)(iii)	$1017.5=(54(\textit{their } n)+37)(2x+1)$	**M1**	For attempt to solve to obtain a value for x. n must be a positive integer
	$x=-\frac{1}{4}$	**A1**	
10(b)	$(2y+1)(3(2y+1))^{n-1}=$ $4(2y+1)(3(2y+1))^{n+1}$ Or $(3(2y+1))^{n-1}=4(3(2y+1))^{n+1}$ Or $(2y+1)r^{n-1}=4(2y+1)r^{n+1}$ Or $ar^{n-1}=4ar^{n+1}$	**B1**	Award when a correct statement is first seen
	Either $(2y+1)^2=\frac{1}{36}$ oe or $(6y+3)^2=\frac{1}{4}$ oe or $r^2=\frac{1}{4}$ oe	**M1**	**Either M1** for an equation of the form $(2y+1)^2=k$ or $(6y+3)^2=m$ where k and m are numerical and not zero (may be expanded) with no terms in n **Or M1** for $r^2=p$, where p is numerical and not zero
	$2y+1=\pm\frac{1}{6}$ or $6y+3=\pm\frac{1}{2}$	**A1**	
	$-\frac{5}{12}$, $-\frac{7}{12}$ and no others	**A1**	For both
10(c)	$-1<2\sin^2\theta<1$ oe soi or $0<2\sin^2\theta<1$ soi	**B1**	Allow $2\sin^2\theta<1$ May be implied by $\theta<\frac{\pi}{4}$
	$\theta<\frac{\pi}{4}$ or $\theta<0.785$	**B1**	
	$0<\theta<\frac{\pi}{4}$ Or $0<\theta<0.785$ or better	**B1**	