Question	Answer	Marks	Guidance
10(b)	**Alternative 1**		
	first term = 4 + 11×3 or 37 and an attempt at S_{19}	**(M1)**	**FT** *their a* + 11×*their d*
	$\frac{19}{2}\{2(37)+(19-1)\times 3\}$ oe or $\frac{19}{2}\{37+91\}$ oe	**(B2)**	**M1 FT** for *their* first term and *their d* in $\frac{19}{2}\{2(\textit{their}\,37)+(19-1)\times \textit{their}\,3\}$ or for *their* first term and *their* last term in $\frac{19}{2}\{\textit{their}\,37+\textit{their}\,91\}$
	1216	**(A1)**	
	Alternative 2		
	Correct sum of terms: 37 + 40 + 43 + 46 + 49 + 52 + 55 + 58 + 61 + 64 + 67 + 70 + 73 + 76 + 79 + 82 + 85 + 88 + 91	**(M3)**	**M2 FT** *their a* and *their d* for sum starting with *their* 37 **and** ending with *their* 91, with at most one omission or error or **M1 FT** *their a* and *their d* for sum starting with *their* 37 **or** ending with *their* 91, with at most two omissions or errors
	1216	**(A1)**	
11(a)	$2\mathbf{a}+\lambda(3\mathbf{b}-2\mathbf{a})$ oe isw or $3\mathbf{b}-(1-\lambda)(3\mathbf{b}-2\mathbf{a})$ oe isw	**B3**	**B1** for $\overrightarrow{PS}=3\mathbf{b}-2\mathbf{a}$ soi and **B1** for correct route using λ, either $\overrightarrow{OX}=\overrightarrow{OP}+\lambda\overrightarrow{PS}$ soi or $\overrightarrow{OX}=\overrightarrow{OS}-(1-\lambda)\overrightarrow{PS}$ soi
11(b)	$\mu(5\mathbf{a}+2\mathbf{b})$ isw	**B2**	**B1** for $\overrightarrow{OQ}=3\mathbf{b}+5\mathbf{a}-\mathbf{b}$ oe soi
11(c)	$2-2\lambda=5\mu$ and $3\lambda=2\mu$ oe	**M2**	for correctly equating scalars for both components **FT** *their* **(a)** and **(b)** if possible **M1 FT** for equating scalars for either component
	Solves to find $\lambda=\frac{4}{19}$ or $\mu=\frac{6}{19}$	**A1**	
	$\lambda=\frac{4}{19}$ and $\mu=\frac{6}{19}$	**A1**	
11(d)	$\frac{6}{19}$ isw	**B1**	
11(e)	$\frac{4}{15}$ isw	**B1**	