Question			Answer	Marks	AO		Guidance
7			**DR** GP, with $a = 15$, $r = 0.6$	**B1**	**3.1a**	Identify GP; correct a and r soi	Stated or implied by use in equation
			$S_\infty = \dfrac{15}{1-0.6}$	**B1**	**1.1a**	Correct S_∞, with their a and r	Must be using correct formula Allow $a = 25$, even if not stated explicitly before formula is used Allow $a = 15$, $r = 0.6$ and $\dfrac{a}{1-r} = 37.5$ to imply B1 B0 for 37.5 with no evidence
			$S_N = \dfrac{15(1-0.6^N)}{1-0.6}$	**B1**	**1.1a**	Correct S_N, with their a and r	Must be using correct formula Allow $a = 25$, even if not stated explicitly before formula is used
			$37.5 - 37.5(1 - 0.6^N) < 10^{-4}$ $37.5 \times 0.6^N < 10^{-4}$	**M1**	**3.1a**	Link $S_\infty - S_N$ to 10^{-4} and attempt to rearrange	As far as $p \times 0.6^N < q$ (q possibly 2 terms) Condone either '=' or any inequality sign M0 for eg $15 \times 0.6^N = 9^N$ or $1 - 0.6^N = 0.4^N$
			$0.6^N < 2.67 \times 10^{-6}$	**A1**	**1.1**	Correct equation in useable form	Any linking sign If using logs on 37.5×0.6^N then the product must be dealt with correctly to get both this A1 and the following M1

Question			Answer	Marks	AO		Guidance
			$N > \log_{0.6}(2.67 \times 10^{-6})$	**M1**	**2.1**	Use logs to solve equation	Either take logs on both sides (consistent base), drop power and rearrange, or take $\log_{0.6}$ on RHS (could be base other than 0.6 if error when manipulating indices) Any linking sign, including an inequality sign that does not change direction
			$N > 25.125\ldots$	**A1**	**1.1**	Obtain 25.1 / 25 / 26	Any sign No evidence of use of logs – award B1 instead of M1A1 (and can still get final A1)
			hence $N = 26$	**A1**	**2.2a**	Obtain $N = 26$ only (or eg N is 26) www	A0 if inequality eg $N \geq 26$ A0 if it comes from an incorrect inequality eg $N < 25.125\ldots$ unless recovered by testing at least one relevant integer value If solving an equation then must test at least one integer value to justify N
				[8]			If either or both of the second and third B marks are not awarded for lack of **DR** then all other marks are available Answer only is 0/8 T&I could get some credit depending what equations are shown, but question requires both **DR** and an algebraic method so a final answer of 26 will not get credit