Question			Answer	Mark	AO	Guidance
7	(a)		$350 \times (1.03)^2$	**M1**	**3.3**	oe (if correct = 371.315 ... - **M1** may be implied by this value rot to 1dp or better – NB $350 \times 1.06 = 371$)
			$\times 1.015^{13}$	**M1**	**1.1**	Multiplying their 371.315… by 1.015^{13} **M1** implied by 450.610… rot
			$= 450.61$	**A1**	**1.1**	awrt (£)451 Do not ISW (mark final answer)
				[3]		**SCB1** for awrt (£)451 without working (max. 1/3)
7	(b)		**DR** $350 \times 1.03^2 \times 1.015^n > 500$	**M1***	**3.1b**	Setting up a correct (in)equality. Allow with their 371.315 ...from **(a)** i.e. Their $371.315 ... \times 1.015^n > 500$ Allow '=' throughout and condone < Allow any variable for n or $n \pm 2$ in place of n.
			$n \ln 1.015 > \ln 1.346566$	**M1 dep***	**1.1**	Take logs of both sides (may not be ln) and apply log laws correctly to reach $n \ln 1.015 > \cdots$ Or using $\log_{1.015}$ correctly to reach an (in)equality in n: $\frac{500}{their\ 371.315 ...} (= 1.346 ...) < 1.015^n$ $\Rightarrow n > \log_{1.015} 1.346 ...$ Or using $n - 2$: $\frac{500}{their\ 371.315 ...} (= 1.346 ...) < 1.015^{n-2}$ $\Rightarrow n - 2 > \log_{1.015} 1.346 ...$
			$n > 19.99$	**A1**	**1.1**	Or $n - 2 > 19.99 ...$ (Do not allow this mark with $n + 2$)
			After 22 years	**A1**	**3.2b**	

			Alternative Method $350 \times 1.03^2 \times 1.015^{13} \times 1.015^{n-15} > 500$	**M1***		Setting up a correct (in)equality. Allow with their 450.61… from part **(a)** Allow '=' throughout and condone < Allow any variable for n or $n \pm 15$ in place of $n - 15$
			$(n - 15) \ln 1.015 > \ln 1.109 \ldots$	**M1 dep***		Take logs of both sides (may not be ln) Or using $\log_{1.015}$ correctly to reach an (in)equality in n: $\frac{500}{their\ 450.61\ldots} (= 1.109 \ldots) < 1.015^{n-15}$ $\Rightarrow n - 15 > \log_{1.015} 1.109 \ldots$
			$n - 15 > 6.9 \ldots$ After 22 years	**A1** **A1**		
				[4]		NB trial and improvement or non-logarithm methods score 0.