Question	Scheme	Marks
1(a)	(i) There is a common difference (no common ratio) and so an arithmetic series should be used.	B1
	(ii) $(u_n) = 5 + (n-1)"d"$ or $(u_n) = 5 + n"d"$	M1
	$(u_n) = 5 + 0.25(n-1)$ oe	A1
		(3)
(b)	Need $S_n = \frac{n}{2}\left(2\times 5 + (n-1)\times 0.25\right) \geqslant 350$	M1A1
	$\Rightarrow 0.25n^2 + 9.75n \geqslant 700 \Rightarrow (n+19.5)^2 - 19.5^2 \geqslant 2800 \Rightarrow n = ...$	M1
	So 37 weeks.	A1
		(4)
		(7 marks)

Notes:

(a)(i)

B1: Identifies that there is a common difference (e.g. goes up in equal amounts) between first and second, and second and third terms, or that the ratio between first and second, and second and third is not the same, and states arithmetic series/sequence to be used.

M1: Attempts general term for A.S. with n or $n-1$ used and their d (which need not be correct).

A1: Correct expression for general term, accept equivalents, eg $4.75 + 0.25n$. May use another label than u_n or no label at all.

(b)

M1: Uses the sum formula for A.S. with their a and d and equates to, or sets inequality with, 350. Accept with any inequality symbol or equality between.

A1: Correct equation/inequality. Accept with any inequality symbol or equality between.

M1: Forms and solves a 3 term quadratic (need not be gathered to one side). Any valid method (including calculator – you may need to check).

A1: 37 weeks selected as answer.

For attempts via listing, send to review.

For use of geometric series:

Case 1: If a student states arithmetic series but uses geometric series formulae, then only the B mark can be scored in (a), but in (b) allow M0A0M1A0 if a correct method is used to solve their equation $\frac{5("r"^n - 1)}{"r" - 1} \geqslant 350$ (or with "=" or "<" etc) to find n (so $n = \log_{"r"}(70("r" - 1) + 1)$ oe)

Case 2: If a student states a geometric series and gives a common ratio, then allow B0M1A0 in (a) for $(u_n) = 5"r"^k$ with $k = n$ or $n-1$ and in (b) allow M1A0 for $\frac{5("r"^n - 1)}{"r" - 1} \geqslant 350$ and then M1A0 for a correct method to solve this equation.