Question Number	Scheme	Marks
5(a)	$a+ar^2=75$	M1
	$ar+ar^2=45$	A1
	$\frac{1+r^2}{r+r^2}=\frac{75}{45}\ \left(=\frac{5}{3}\right)$	dM1
	$2r^2+5r-3=0 \qquad (2r-1)(r+3)=0$	
	$r=\frac{1}{2}$ or -3	M1 (NB A1 on e-PEN) A1 (5)
(b)	$a=\frac{75}{\left(1+\frac{1}{4}\right)}=60$	B1
	$S=\frac{a}{1-r}=\frac{60}{\frac{1}{2}}=120 \quad \left(\text{or } S=\frac{a(1-r^n)}{1-r} \text{ with } n=\infty\right)$	M1A1cao (3)
		[8]

(a)

M1 Form an equation in *a* and *r* using either of the pieces of information given.

A1 Form a second equation **with both equations correct**

dM1 Eliminate *a* from their equations using a correct method. Depends on the first M mark.

M1 Solve their 3 term quadratic to obtain at least one value for the common ratio. (The method used must be shown or correct answers from a correct equation seen)

A1 **Both** values correct (½ or 0.5)
Correct answers from incorrect or no working – send to review.

(b)

B1 Obtain the correct value for *a* using $r=\frac{1}{2}$ Can be awarded if seen in (a) and **used in (b)**

M1 Use $S=\frac{a}{1-r}$ with their value of *a* and a value of *r* found in (a) for which $|r|<1$

A1cao Correct answer only