Question Number	Scheme	Marks
1(a)(i)	$\left[\mathrm{P}\left(F<3 \middle\vert F \sim \mathrm{Po}(1.5)\right)=\right]0.8088$ awrt 0.809	B1
		(1)
(ii)	$\left[\mathrm{P}\left(F \ldots 6\right)=\right]1-\mathrm{P}\left(F \text{ „ } 5\right)$ or 1 – 0.9955	M1
	= 0.0045 awrt 0.0045	A1
		(2)
(b)	$R \sim \mathrm{Po}(10) \ \therefore\left[\mathrm{P}\left(R \text{„} 12\right)\right]=0.7916$ awrt 0.792	M1
	$X \sim \mathrm{B}(15, "0.7916")$	M1
	$\left[\mathrm{P}\left(X=10\right)=\right]{}^{15}C_{10}\left("0.7916"\right)^{10}\left(1-"0.7916"\right)^{5}$	M1
	= 0.11405… awrt 0.114	A1
		(4)
(c)	$H \sim \mathrm{Po}(0.4)$	M1
	$\left[\mathrm{P}\left(H=0\right)=\right]\mathrm{e}^{-0.4}$ [=0.6703…] **or** $\left[\mathrm{P}\left(H>0\right)=\right]1-\mathrm{e}^{-0.4}$ [= 0.32967…]	M1
	Profit = $2.4\times"0.6703..."-3\times"0.32967..."$	dM1
	= 0.6197 awrt 0.62	A1
		(4)

	Notes	Total 11
(a) (i)	**B1**	awrt 0.809
(ii)	**M1**	Writing or using $1-\mathrm{P}\left(F \text{ „ } 5\right)$
	A1	awrt 0.0045
(b)	**M1**	For 0.792 or better
	M1	For writing B(15, " their 0.7916") May be implied by a fully correct method for P(X = 10)
	M1	A correct method to find $\mathrm{P}\left(X=10\right)$ using a binomial distribution (implied by awrt 0.114)
	A1	awrt 0.114
(c)	**M1**	Writing or using Po(0.4) e.g. P(H = 1) = 0.268…
	M1	Correct method to find $\mathrm{P}\left(H=0\right)$ or $\mathrm{P}\left(H>0\right)$ May be implied by awrt 0.67 or 1 – awrt 0.67
	M1dep	Dependent on the previous method mark being awarded. Correct method to find the profit. Allow $7.4\times"0.6703..."+2\times"0.32967..."-5$
	A1	awrt 0.62 Allow 62 p