Question Number	Scheme	Marks
2. (a)	$[S_{tt} =] 82\,873 - \frac{1361^2}{40}$ $[S_{ct} =] 83\,634 - \frac{1634 \times 1361}{40}$ $[S_{tt} =] 36\,564.975$ $[S_{ct} =] 28\,037.15$	M1 A1 A1 (3)
(b)	$[r =] \frac{'28\,037.15'}{\sqrt{28\,732.1 \times '36\,564.975'}} = 0.865...$ awrt **0.865**	M1 A1 (2)
(c)	In general, films with higher **cost** have higher ticket **sales**.	B1ft (1)
(d)	$[b =] \frac{'28\,037.15'}{28\,732.1}$ [= 0.9758…] $[a =] \frac{1361}{40} - 'b' \times \frac{1634}{40}$ **or** $34.025 - "b" \times 40.85$ $t = -5.8369… + 0.9758…c$ * $t =$ awrt –5.84 + awrt 0.976c*	M1 M1 A1cso* (3)
(e)	$t = -5.84 + 0.976 \times 90$ $t =$ £82 million awrt **£82 million**	M1 A1 (2)
(f)	$-5.84 + 0.976c < 0.8c \rightarrow 0.176c < 5.84$ $c < 33.1818$ $c <$ awrt (£) **33.2**	M1 A1 (2)
	Notes	**Total 13**
(a)	Mark part (a) and (b) together M1 either correct expression A1 36 564.975 or exact equivalent A1 28037.15 or exact equivalent **SC** M1A1 A0 for awrt 36565 and awrt 28037	
(b)	M1 valid attempt at r with their $S_{cc} \neq 28732.1$ and their $S_{ct} \neq 83634$ A1 awrt 0.865	
(c)	B1ft only ft if $\|r\|<1$ For a correct comment in context. Must include words underlined (Allow use of c for cost and t for sales) and be compatible with their value in (b). Must have that as one increases/decreases the other increases/decreases. Allow other words eg goes up Do not accept t and c are similar.	
(d)	M1 correct numerical expression for b ft their $S_{ct} \neq 83634$ Implied by awrt 0.9758 or better M1 attempt at a with their value of b substituted. Implied by awrt 5.837 or better A1*cso answer given so both method marks must be awarded and no incorrect working seen. Either $b = 0.9758$ (or better) **or** $a = 5.837$ (or better) must be seen somewhere along with the correct equation in t and c (do not allow fractions).	
(e)	M1 for substituting $c = 90$ into $t =$ awrt –5.84 + awrt 0.976c Implied by awrt 82 A1 £82 million (must include units. Allow 82 million pounds). Allow awrt £82 million	
(f)	M1 forming inequality (allow > or < or = or „ or …) with $0.8c$ A1 correct inequality in c (allow any letter) with awrt 33.2 (units not required). Do not allow as a fraction. Ignore any lower limit. Condone awrt 33200000 or awrt 33.2 million	