Question Number	Scheme	Marks
3 (i) (a)	$w = 0.15$	B1
	$x = 0.7 - 0.15 = 0.55$	B1
	$y = 0.65 - 0.55 = 0.1$	B1
	$z = 1 - 0.15 - 0.55 - 0.1 = 0.2$	B1
		(4)
(b)	$'0.15' + '0.1' = '0.25'$	B1ft
		(1)
(c)	$[\mathrm{P}(C) \times \mathrm{P}(O)] = '0.65' \times '0.7' \neq '0.55' [= \mathrm{P}(C \cap O)]$ or $[\mathrm{P}(C \mid O) =] \dfrac{'0.55'}{'0.7'} \neq '0.65' [= \mathrm{P}(C)]$ oe	M1
	$'0.455' \neq '0.55'$ or $'0.7857'... \neq '0.65'$ [So not independent]*	A1*
		(2)
3 (ii) (a)		
	$\left[P(F \cup H) = \dfrac{2}{7} + \dfrac{1}{4} = \right] \dfrac{15}{28}$	B1
		(1)
(b)	$\dfrac{5}{8} = \dfrac{2}{7} + \mathrm{P}(G) - \dfrac{2}{7}\mathrm{P}(G)$	M1
	$\mathrm{P}(G) = \dfrac{\frac{5}{8} - \frac{2}{7}}{1 - \frac{2}{7}} = \dfrac{19}{56} \div \dfrac{5}{7}$	dM1
	$\mathrm{P}(G) = \dfrac{19}{40}$	A1
		(3)
(c)	$\left[P(F \cap G) = \dfrac{2}{7} \times '\dfrac{19}{40}' = \right] \dfrac{19}{140}$	B1ft
		(1)

	Notes	**Total 12**
(i)(a)	**B1**	$w = 0.15$ If answer is given in the script and the Venn diagram, then mark the script
	B1	$x = 0.55$ If answer is given in the script and the Venn diagram, then mark the script
	B1	$y = 0.1$ If answer is given in the script and the Venn diagram, then mark the script
	B1	$z = 0.2$ If answer is given in the script and the Venn diagram, then mark the script
(b)	**B1ft**	For $w + y = '0.25'$ follow through their w and their y (You will need to check for their values) provided this is a probability
(c)	**M1**	For $'(x+y)' \times '(w+x)' \neq 'x'$ or $\dfrac{'x'}{'w+x'} \neq 'x+y'$ ft their w, x and y
	A1*	A fully correct solution with values evaluated and no errors ft their w, x and y
(ii) (a)	**B1**	For $\dfrac{15}{28}$ oe Allow awrt 0.536
(b)	**M1**	For use of $\mathrm{P}(F \cup G) = \mathrm{P}(F) + \mathrm{P}(G) - \mathrm{P}(F) \times \mathrm{P}(G)$
	dM1	Dependent on M1. For a correct rearrangement to find $\mathrm{P}(G)$ e.g. $\left(\dfrac{5}{8} - \dfrac{2}{7}\right) \div \left(1 - \dfrac{2}{7}\right)$ Allow $\dfrac{19}{56} = \dfrac{5}{7}\mathrm{P}(G)$ May be implied by $\dfrac{19}{40}$
	A1	For $\dfrac{19}{40}$ oe
(c)	**B1ft**	For $\dfrac{19}{140}$ oe or $\dfrac{2}{7} \times \mathrm{P}(G)$ evaluated correctly and where $\mathrm{P}(G)$ is a probability