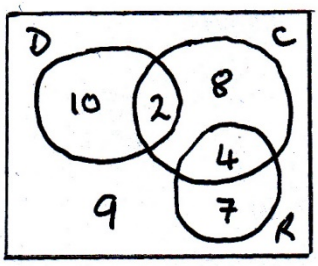
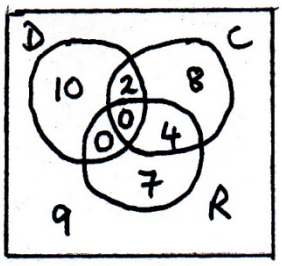
Question Number	Scheme	Marks
2. (a)	 	B1 B1 B1 B1 (4)
(b)	Since no family has a dog and a rabbit a mutually exclusive pair is $\underline{D, R}$	B1 (1)
(c)	$\left[\frac{2+"4"}{40}\right] = \underline{\underline{\frac{3}{20}}}$	B1ft (1)
(d)	e.g. $P(D \cap C) = \frac{2}{40} = \frac{1}{20}$ $P(D) = \frac{12}{40} = \frac{3}{10}$ $P(C) = \frac{14}{40} = \frac{7}{20}$ or	M1
	$\frac{1}{20} \neq \frac{3}{10} \times \frac{7}{20} = \left[\frac{21}{200}\right]$ so they are not independent	A1
ALT	$P(C) = \frac{14}{40} = \frac{7}{20}$ vs $P(C\|D) = \frac{2}{12} = \frac{1}{6}$ or $P(D) = \frac{12}{40} = \frac{3}{10}$ vs $P(D\|C) = \frac{2}{14} = \frac{1}{7}$	(2)
(e)	e.g. $\left[P(R \mid C) =\right] \frac{P(R \cap C)}{P(C)}$ or $\frac{"\frac{4}{40}"}{\frac{14}{40}}$	M1
	$= \frac{4}{14} = \underline{\underline{\frac{2}{7}}}$	A1ft (2)
(f)	$\frac{"10"+"7"}{"10"+"7"+9}$ (o.e.) ; = $\underline{\underline{\frac{17}{26}}}$ (accept $0.6\dot{5}38461\dot{}$)	M1; A1 (2)
		[12]

	Notes
(a)	1st B1 for 3 intersecting circles with $n(D \cap R) = 0$ (either diagram) [Blank is not equiv'to 0] 2nd B1 for a box and 9 outside the circles 3rd B1 for $n(D \cap C) = 2$ and $n(D \cap C') = 10$ 4th B1 for 8, 4 and 7 correctly placed Allow probabilities (out of 40) or decimals or integers.
(b)	B1 for D and R with a suitable reason (extra pairs is B0) e.g. $P(D \cap R) = 0$ Condone $\varnothing$ for 0 or no intersection/overlap. Must see an attempt at a reason. Must be D, R not $P(D)$, $P(R)$ $P(D \cup R) = P(D) + P(R)$ is not a suitable reason though.
	For (c) onwards if their $N \neq 40$ allow denominators of probs with 40 or N
(c)	B1ft ft their "4" (but must give a proper fraction) ft blank as 0 or $\frac{3}{20}$ or exact equivalent
(d)	M1 for stating all the probabilities (values) required for a suitable test, must be labelled. Must use D and C ft their VD. Must be clear which test they are trying to use. A1 for the correct probabilities and correct calculation or comparison and correct conclusion
(e)	M1 for a correct ratio of probabilities (ft their 4): either as an expression or values A1ft for $\frac{2}{7}$ or exact equivalent (allow ft of their 4 [$\neq 0$] provided it gives an exact fraction)
(f)	M1 for a correct ratio (possibly of probabilities) ft their 10 and their 7 [Not expression here] A1 for $\frac{17}{26}$ or exact equivalent (e.g. 0.654 will score M1A0)