1	(a)(i)		$\frac{10}{25}$	1	B1	for 0.4 oe
	(ii)		$\frac{8}{25}$	1	B1	for 0.32 oe (penalise incorrect notation once only in (a))

2		$1 - (0.24 + 0.31)\ (= 0.45)$ or $(0.24 + 0.31) \times 180\ (= 99)$		4	M1	or for a correct equation for missing values eg $x + 0.24 + 2x + 0.31 = 1$ oe (can be implied by 2 probabilities that total 0.45 in table if not contradicted in working space)
		'0.45' ÷ 3 (= 0.15) or '0.45' × 180 (= 81) or 180 − 99 (= 81)			M1	(or 0.15 correctly placed in table if not contradicted)
		'0.15' × 180 or '81' ÷ 3			M1	Or an answer of $\frac{27}{180}$
			27		A1	
						Total 4 marks

3	(a)	eg $1 - (0.2 + 0.12 + 0.08)\ (= 0.6)$ **or** $1 - \left(\frac{20}{100} + \frac{12}{100} + \frac{8}{100}\right)\left(= \frac{60}{100}\right)$ oe **or** $100(\%) - (20(\%) + 12(\%) + 8(\%))\ (= 60(\%))$ **or** $0.2 + 0.12 + 0.08 + 3x + x = 1$ oe		3	M1	for a correct calculation for the remaining probabilities **or** a correct equation for the remaining probabilities
		"0.6" ÷ 4 (= 0.15) oe **or** "0.6" ÷ 4 × 3 **or** "0.6" × 0.75 oe (Sight of 0.15 in the table for Orange or Pink or 0.45 for Pink gains M2)			M1	For dividing the remaining probability by 4 or finding ¾ of the remaining probability NB "0.6" means 0.6 must come from correct working
		Working not required, so correct answer scores full marks (unless from obvious incorrect working)	0.45		A1	or $\frac{9}{20}$ oe **or** 45% (if working in % final answer must have % sign). Allow $\frac{0.45}{1}$ If no answer on answer line, check in the correct space in table above.
	(b)	0.12 × 150 oe eg 12 + 6		2	M1	for a correct calculation to find the number of times the spinner lands on blue
		Working not required, so correct answer scores full marks (unless from obvious incorrect working)	18		A1	(an answer of $\frac{18}{150}$ scores M1A0 as this is a probability not a number of times)
						Total 5 marks

4		eg $7 + 5 = 12$ **and** $\frac{6}{13} = \frac{12}{26}$ **or** 26 **or** eg $\frac{7+5}{7+5+x} = \frac{6}{13}$ **and** $13(7+5) = 6(7+5+x)$		3	M1	for method to find the total number of counters
		eg 26 − 12 **or** eg $6x = 84$			M1	complete method to find the number of yellow counters **or** a correct equation with x terms isolated
		Working not required, so correct answer scores full marks (unless from obvious incorrect working)	14		A1	cao
						Total 3 marks

5	(a)		$\dfrac{13}{30}$	1	B1	accept 0.43(333…) or 43(.333…)%
	(b)	e.g. $1-\dfrac{7}{30}$ **or** $\dfrac{13+4+6}{30}$ **or** $\dfrac{23}{a}$ where $a > 23$ and $a \neq 30$		2	M1	
			$\dfrac{23}{30}$		A1	accept 0.76(666…) or 0.77 or 76(.666…)% or 77%
						penalise incorrect notation once only
						Total 3 marks
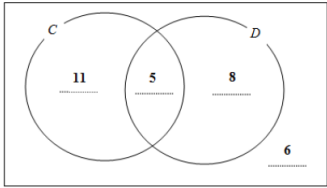
6	(a)		0.45	1	B1	oe eg $\dfrac{9}{20}, \dfrac{45}{100}, 45\%$
	(b)	eg $1 - (0.25 + 0.2 + 0.2)$ $(= 0.35)$ **or** $1 - (\text{"}0.45\text{"} + 0.2)$ $(= 0.35)$ **or** $300 \times (0.25 + 0.2 + 0.2)(=195)$		3	M1	allow use of their "0.45" from part (a), check the table
		eg $300 \times \text{"}0.35\text{"}$ **or** $300 - \text{"}195\text{"}$			M1	for a complete method
			105		A1	cao (award $\dfrac{105}{300}$ M2 only)
						Total 4 marks

7	(i)		$\dfrac{7}{20}$	1	B1 oe	
	(ii)	$\dfrac{2+6}{20}$ oe or $1-\dfrac{5+7}{20}$ oe		2	M1 ft their (i)	
			$\dfrac{8}{20}$		A1 oe penalise incorrect notation only once	
					Total 3 marks	

8		0.65×300 oe			M1	
			195		A1 (SCB1 for 105)	
					Total 2 marks	

9	(a)	$1 - (0.24 + 0.16 + 0.38)$ oe		2	M1	
			0.22		A1 oe	
	(b)	$0.24 + 0.16$ $(= 0.4)$ oe		2	M1	
			0.4		A1 oe	
					Total 4 marks	

10		$28 \div 0.35$ $(= 80)$ oe eg $(28 \div 7) \times 20$ $(= 80)$		5	M1	indep for calculating total number of sweets
		$1 - (0.2 + 0.35)$ $(= 0.45)$ oe **or** $(0.2 + 0.35) \times \text{"}80\text{"}$ $(= 44)$ or $28 + \text{"}16\text{"}$ $(= 44)$			M1	or for a correct equation for missing values eg $x + 2x + 0.2 + 0.35 = 1$ oe (can be implied by 2 probabilities that total 0.45 in table if not contradicted in working space)
		$\text{"}0.45\text{"} \div 3$ $(= 0.15)$ oe **or** $\text{"}0.45\text{"} \times \text{"}80\text{"}$ $(= 36)$ **or** $\text{"}80\text{"} - \text{"}44\text{"}$ $(= 36)$			M1	(or 0.15 or 0.3 seen in table – either order)
		$\text{"}80\text{"} \times \text{"}0.15\text{"}$ **or** $\text{"}80\text{"} \times \text{"}0.3\text{"}$ $(= 24)$ **or** $\text{"}36\text{"} \div 3$ or $\text{"}36\text{"} \div \dfrac{3}{2}$ $(= 24)$			M1	A correct calculation for the number of white sweets or the number of pink sweets
			12		A1	
10	alt	$1 - (0.2 + 0.35)$ $(= 0.45)$ or $100(\%) - 20(\%) - 35(\%) = 45(\%)$		5	M1	or for a correct equation for missing values eg $x + 2x + 0.2 + 0.35 = 1$ oe
		$\text{"}0.45\text{"} \div 3$ $(= 0.15)$ $45(\%) \div 3$ $(= 15(\%))$			M1	(or 0.15 or 0.3 seen in table – either order)
		$\dfrac{n}{28} = \dfrac{0.15}{0.35}$ **or** $\left(\dfrac{n}{0.15}\right) = \dfrac{28}{0.35}$ oe or $\dfrac{n}{28} = \dfrac{0.3}{0.35}$ **or** $\left(\dfrac{n}{0.3}\right) = \dfrac{28}{0.35}$ **or** 35% = 28 so 5% = 4			M1	for using proportion with an expression for n white sweets or finding 5% oe to enable calculation to 15%
		$(n =)\ 28 \times \dfrac{0.15}{0.35}$ **or** $(n =)\ 0.15 \times \dfrac{28}{0.35}$ or 15% = 3 × 4 or $28 \times \dfrac{0.3}{0.35}$ **or** $0.3 \times \dfrac{28}{0.35}$ or 30% = 6 × 4 $(= 24)$			M1	a calculation using proportion that would lead to finding their n or $2n$
			12		A1	
					Total 5 marks	

11	(a)		Correct Venn diagram	3	B3	for all sections completed correctly If not B3 then award B2 for 3 correct sections B1 for 1 or 2 correct sections
	(b)(i)		$\frac{13}{30}$	1	B1	oe, ft their Venn diagram
	(ii)		$\frac{6}{30}$	1	B1	oe, ft their Venn diagram
						Total 5 marks

12	(a)		Correct scores	2	B2 for all scores correct (B1 for 3 or 4 scores correct)
	(b)		$\frac{4}{12}$	1	B1 ft oe accept 0.33(33…)
					Total 3 marks

13	$1 - (0.24 + 0.4)\ (= 0.36)$ oe or $3x + x = 1 - (0.24 + 0.4)$ oe		4	M1	
	$48 \div 0.24\ (= 200)$ or "0.36" $\div 4\ (= 0.09)$ or "0.36" $\div 4 \times 3\ (= 0.27)$			M1	
	"0.27" $\times$ "200" or "200" $\times$ "0.36" $\div 4 \times 3$ ("200" $- 48 -$ "80") $\div 4 \times 3$			M1 for a complete method	
		54		A1	
				Total 4 marks	

13 ALT	$1 - (0.24 + 0.4)\ (= 0.36)$ oe or $3x + x = 1 - (0.24 + 0.4)$ oe		4	M1	
	$48 \div 24\ (= 2)$ oe or $\left(\dfrac{"0.36"}{4} \times 3\right) \div 0.24 \left(= \dfrac{9}{8} = 1.125\right)$ oe or $\left(\dfrac{"36"}{4} \times 3\right) \div 24 \left(= \dfrac{9}{8} = 1.125\right)$ oe			M1	
	$"2" \times \left(\dfrac{"36"}{4} \times 3\right)$ oe or $\dfrac{"9"}{8} \times 48$ oe or $("27" \div 24) \times 48$ oe			M1 for a complete method	
	Correct answer scores full marks (unless from obvious incorrect working)	54		A1	
				Total 4 marks	

14	eg $0.74 \times 300\ (= 222)$ **or** $1 - 0.74\ (= 0.26)$ seen **or** $\dfrac{78}{300}$		2	M1	for a method to work out an estimate for the number of games Evie will win **or** the probability that Evie will lose **or** an answer of $\dfrac{78}{300}$
	Correct answer scores full marks (unless from obvious incorrect working)	78		A1	cao
					Total 2 marks

15	(a)		$\dfrac{13}{30}$	1	B1	oe eg 0.43(333…) or 43.(33…)%
	(b)		$\dfrac{6}{30}$	1	B1	oe eg $\dfrac{1}{5}$ or $\dfrac{3}{15}$ or 0.2 or 20%
	(c)	eg $\dfrac{2}{5}=\dfrac{16}{40}$ **or** $\dfrac{2}{5}\times(10+30)(=16)$ oe		2	M1	for a method to work out the number of white counters now in the bag
		Correct answer scores full marks (unless from obvious incorrect working)	5		A1	
						Total 4 marks

16	$1-(0.32+0.13+0.28)$ oe eg $1-0.73$ (= 0.27) or 0.32×200 (= 64) or 0.13×200 (= 26) or 0.28×200 (= 56) or 0.73×200 (= 146)		3	M1	(0.27 may be seen in table) [could work with percentages eg $100-32-13-28$ (=27)]
	$[1-"0.73"]\times200$ oe eg"0.27" $\times200$ or $200-"64"-"26"-"56"$ or $200-"146"$			M1	for a complete method or for an answer of $\dfrac{54}{200}$
	Correct answer scores full marks (unless from obvious incorrect working)	54		A1	
					Total 3 marks