Question			Answer	Marks	Part Marks and Guidance	
1			$\frac{1}{7}$	**3**	**B2** for $\frac{3x}{21x}$ or for $\frac{3}{21}$ oe **Or B1** for $21x$ seen	
2	(a)		16 or 17	**3**	**B2** for $16\frac{2}{3}$ or 16.6[6…] **Or M1** for $\frac{1}{6} \times 100$ oe	
	(b)		$\frac{3}{24}$ or $\frac{1}{8}$ or 0.125 or 12.5%	**3**	**M2** for $(\frac{1}{4} \times \frac{1}{6}) \times 3$ oe Or for complete, correct table of values or list **Or M1** for $\frac{1}{4} \times \frac{1}{6}$ oe Or for identifying the 3 required pairs	

3	**(a)**		0.15 oe	2	**M1** for 1 – (0.15 + 0.7) soi by ans 0.78	
	(b)		0.85 oe	2	**M1** for 0.15 + 0.7 soi by answer 0.22	
	(c)		Same number of red and blue oe More white oe	1 1	Or other correct observations. **Must** refer to numbers of counters. Mark the best bit	Condone : 15% are red and 15% are blue 70% are white

4	**(a)**		- - - 9 - 7 9 11 7 9 11 13 9 11 13 15	2	**B1** for 6 correct entries	
	(b)		Certain Unlikely	1 1		
	(c)		$\frac{1}{4}$	2	**B1** for $\frac{4}{n}$ or $\frac{n}{16}$	
	(d)		$\frac{3}{16}$ or 0.1875 or 18.75%	1		

5	**(a)**		0.13 oe	2	**M1** for 1 – (0.2 + 0.15 + 0.11 + 0.17 + 0.24) soi by answer of 0.31	
	(b)		0.48 oe	2	**M1** for 0.2 + 0.11 + 0.17 soi by answer of 0.30	
	(c)		0.0225 oe	2	**M1** for 0.15 × 0.15	
	(d)		27 or 28	3	**B2** for 27.5 Or **M1** for 250 × 0.11	

6			(No) Trial repeated a lot of times 315 ÷ 600 soi by 0.525 Comparing 0.5 and '0.525' soi	 1 1 1	Allow Yes oe Or 600 × 1/2 oe soi by 300 Or comparing 300 and 315 soi or 300 and 285	**All three marks independent** Or mention of 50/50, evens etc soi Or comparing 315 and 285 soi

7			0.05 oe	**2**	**M1** for 1 – (0.67 + 0.28)	

8	**(a)**		4,1 3,2 2,3 1,4 oe Final answer	1	No extras.	Not just highlighted on a diagram
	(b)		$\frac{their 4}{36}$ oe isw	2FT	**B1** for 36 soi or for $\frac{4}{n}$ seen	

9	**(a)**		A at $\frac{4}{6}$ B at $\frac{3}{6}$	1 1	Each ± 1 mm After **0** allow **SC1** for 2 correct arrows, no labels	
	(b)		Large number of trials How many 4s Divide by total number of trials	1 1 1	≥ 50 trials (if mentions a number) May be by example	Condone 'many', 'multiple' etc for 'large' NOT 'times it lands on each no.' NOT 'work out %, etc' with no details For final mark, if 100 trials then accept 'the number of 4s is the [probability as a] percentage'

Question			Answer	Marks	Answer
10			Clear method shown and correct answers correctly assigned to Alice and George. A correct comparison to conclude that George is more likely eg 'George is more likely because his probability is greater'	6	*FOR EXAMPLE:* *George :* $\frac{6}{10} \times \frac{6}{10} = \frac{36}{100} = 0.36$ *Alice:* $\frac{6}{10} \times \frac{5}{9} = \frac{30}{90} = 0.33\ldots$ *(Allow 0.55 to 0.56 for* $\frac{5}{9}$*)* *0.36 > 0.33, so George is more likely* *(Alternatively may change fractions to a common denominator to compare)*
			Clear method shown and correct answers correctly assigned to Alice and George **but** with an incomplete comparison eg 'George is more likely' but without justification	5 – 4	$\frac{36}{100}$ oe and $\frac{30}{90}$ oe obtained
			$\frac{30}{90}$ oe obtained	3 – 2	$\frac{36}{100}$ oe obtained
			Some idea to multiply fractions oe or an attempt to draw a tree diagram	1 – 0	No relevant comment

11	(a)	(i)	0.3 oe nfww	2	**M1** for 1 − (0.2 + 0.35 + 0.15) soi by answer of 0.48	*In this question −1 once for poor notation in answers* *eg* $\frac{0.3}{1}$ *or 0.3 : 1 etc*
		(ii)	0.55 oe	2	**M1** for 0.2 + 0.35 soi by answer of 0.37	
	(b)		0.0225 oe	2	**M1** for 0.15 × 0.15 oe	
	(c)		40	3	**M2** for 8 ÷ 0.2 oe or for <u>two</u> of 6 [red], 14 [blue], 12 [green] soi Or **M1** for 8 = 0.2, so 4 = 0.1 oe soi or for <u>one</u> of 6[red], 14 [blue], 12 [green] soi	eg 16 = 0.4