

Probability Past Paper Answers Edexcel Maths IGCSE Higher- Calculator

1.

$2/5 \times 30$		12	2	M1 A1	12 out of 30 = M1A1 12/30 = M1A0	
						Total 2 marks

2.

(a)		$x/60$ oe	1	B1	Must be a fraction or $0.016 \text{ rec } x$	
(b) (i)	$2("x/60") = (x+20)/80$ $16(0) x = 6(0)(x + 20)$ or $80 x = 30(x + 20)$ or $2x/3 = (x + 20)/4$		3	M2 (must be an equation) M1 for either $2("x/60")$ or $(x+20)/80$ A1 dep Correct removal of denominators. Correct removal of denominators. Simplifying denominators.		
(ii)	$8x = 3x + 60$ or $5x = 60$ or $60 \div 5$		12	2	M1 A1	Dependent on M1. Can be marked if seen in b(i)
						Total 6 marks

3.

(a)	$1 - (0.18 + 0.2 + 0.23 + 0.22)$		0.17	2	M1 A1	$1 - 0.83$
(b)	40×0.2		8	2	M1 A1	8 out of 40 = M1A1 $8/40 = \text{M1A0}$
						Total 4 marks

4.

(a)	Black circle = 0.3 White region = 0.6 All values "correct" for second shot			3	B1 B1 B1ft Allow ft if each group of 3 branches on second arrow all sum to 1 and are consistent with first arrow branches	
(b)	Any one correct product in numerical form e.g. ("0.3" x 0.1) or (0.1 x "0.3") or ("0.6" x "0.6") ("0.3"x 0.1) + (0.1x "0.3") + ("0.6" x "0.6")		0.42oe	3	M1ft e.g. (Black, Miss) or (Miss, Black) or (White, White) M1ft 3 "correct" products with intention to add A1 cao	
						Total 6 marks

5.

Question	Working	Answer	Mark	Notes
8 (a)	$\frac{4}{10} + \frac{2}{10}$ or $4 + 2$ or 6		2	M1
		$\frac{6}{10}$ or $\frac{3}{5}$		A1
(b)	eg $\frac{4}{10} \times 200$		2	M1
		80		A1 cao
(c)(i)	$\frac{3}{10} \times \frac{2}{9}$		5	M1
		$\frac{6}{90}$ oe		A1 $\frac{6}{90}$ oe inc $\frac{1}{15}$ SC M1 for $\frac{3}{10} \times \frac{3}{10}$
(ii)	$\frac{3}{10} \times \frac{2}{9} + \frac{4}{10} \times \frac{3}{9} + \frac{2}{10} \times \frac{3}{9}$			M1 for one correct product M1 for sum of all 3 correct products
		$\frac{24}{90}$ oe		A1 for $\frac{24}{90}$ oe inc $\frac{4}{15}$
				SC: M1 for $\frac{3}{10} \times \frac{2}{10}$ or $\frac{4}{10} \times \frac{4}{10}$ or $\frac{2}{10} \times \frac{3}{10}$ M1 for $\frac{3}{10} \times \frac{2}{10} + \frac{4}{10} \times \frac{4}{10} + \frac{2}{10} \times \frac{3}{10}$
				Total 9 marks

6.

Question	Working	Answer	Mark	Notes
13 (a)(i)	$5 + 2$ or 7 or $\frac{5}{20} + \frac{2}{20}$		2	M1
		$\frac{7}{20}$ oe		A1 accept answer written as an equivalent fraction or 0.35 or 35%
(ii)			2	M1 for $\frac{9}{a}$ with $a > 9$ or $\frac{b}{20}$ with $b < 20$ or 9 and 20 used with incorrect notation (eg. 9 : 20)
		$\frac{9}{20}$ oe		A1 accept answer written as an equivalent fraction or 0.45 or 45%
(b)(i)	$\frac{2}{20} \times \frac{2}{20}$ oe and no other terms		2	M1 SC M1 for $\frac{2}{20} \times \frac{1}{19}$
		$\frac{4}{400}$ oe		A1 accept answer written as an equivalent fraction eg $\frac{1}{100}$ or 0.01 or 1%
(ii)	$\frac{5}{20} \times \frac{8}{20}$ or $\frac{8}{20} \times \frac{5}{20}$ or $\frac{4}{20} \times \frac{4}{20}$		3	M1 SC M1 for $\frac{5}{20} \times \frac{8}{19}$ or $\frac{8}{20} \times \frac{5}{19}$ or $\frac{4}{20} \times \frac{3}{19}$
	$\frac{5}{20} \times \frac{8}{20} + \frac{8}{20} \times \frac{5}{20} + \frac{4}{20} \times \frac{4}{20}$			M1 for $\frac{5}{20} \times \frac{8}{19} + \frac{8}{20} \times \frac{5}{19} + \frac{4}{20} \times \frac{3}{19}$
		$\frac{96}{400}$ oe		A1 accept answer written as an equivalent fraction eg $\frac{6}{25}$ or 0.24 or 24%
				Total 9 marks

7.

Question	Working	Answer	Mark	Notes
(a)	$\frac{2}{7} \times \frac{1}{6}$ Or $\frac{3}{7} \times \frac{2}{6}$ $\frac{2}{7} \times \frac{1}{6} + \frac{3}{7} \times \frac{2}{6}$	$\frac{8}{42}$	3	M1 Replacement - $\frac{2}{7} \times \frac{2}{7}$ Or $\frac{3}{7} \times \frac{3}{7}$ M1 Replacement - $\frac{2}{7} \times \frac{2}{7} + \frac{3}{7} \times \frac{3}{7}$ A1 $\frac{8}{42}$ oe
(b)	$\frac{2}{7} \times \frac{3}{6}$ Or $\frac{3}{7} \times \frac{2}{6}$ Or $\frac{1}{7} \times \frac{1}{6}$ $\frac{2}{7} \times \frac{3}{6} + \frac{3}{7} \times \frac{2}{6} + \frac{1}{7} \times \frac{1}{6} + \frac{1}{7} \times \frac{1}{6}$	$\frac{14}{42}$	3	M1 Replacement - $\frac{2}{7} \times \frac{3}{7}$ Or $\frac{3}{7} \times \frac{2}{7}$ Or $\frac{1}{7} \times \frac{1}{7}$ M1 Replacement - $\frac{2}{7} \times \frac{3}{7} + \frac{3}{7} \times \frac{2}{7} + \frac{1}{7} \times \frac{1}{7} + \frac{1}{7} \times \frac{1}{7}$ A1 $\frac{14}{42}$ oe
				Total 6 marks

8.

Question	Working	Answer	Mark	Notes
(a) (i)	$0.08 + 0.25$		2	M1 A1 oe e.g. accept 33/100 0.33/1
(a) (ii)	$1 - 0.08 - 0.1$ or $1 - (0.25 + 0.1 + 0.08) + 0.25$ or $0.57 + 0.25$ or $(1 - ("0.33" + 0.1)) + 0.25$			2
(b)	0.08×0.25		2	
(c)	$\frac{20}{100} \times 60$ oe			2

9.

Question	Working	Answer	Mark	Notes
(a)	$\frac{4}{9} \times \frac{3}{8}$		2	M1 A1 oe, eg $\frac{12}{72}$ Allow 0.16(666...) rounded or truncated to at least 2dp
(b)	$\frac{5}{9} \times \frac{4}{8} + \frac{4}{9} \times \frac{5}{8}$ or $\frac{20}{72} + \frac{20}{72}$ oe or $1 - \frac{4}{9} \times \frac{3}{8} - \frac{5}{9} \times \frac{4}{8}$ or $1 - \frac{1}{6} - \frac{5}{9} \times \frac{4}{8}$ oe			3
	Alternative: with replacement $\frac{5}{9} \times \frac{4}{9} + \frac{4}{9} \times \frac{5}{9}$ or $\frac{40}{81}$ oe			
				Total 5 marks

10.

(a)	$\frac{70}{100} \times \frac{30}{100}$ oe	$\frac{21}{100}$ oe	2	M1 A1 eg $\frac{2100}{10000}$ or 0.21
(b) (i)	$\frac{10}{100} \times \frac{9}{99}$ oe	$\frac{1}{110}$	5	M1 A1 oe eg $\frac{90}{9900}$ or 0.009
(b) (ii)	$\frac{2}{100} \times \frac{7}{99}$ or $\frac{7}{100} \times \frac{2}{99}$ or $\frac{14}{9900}$ or $\frac{68}{100} \times \frac{67}{99}$ or $\frac{4556}{9900}$ oe $\frac{2}{100} \times \frac{7}{99} + \frac{7}{100} \times \frac{2}{99} + \frac{68}{100} \times \frac{67}{99}$ oe	$\frac{382}{825}$		M1 M1 Implies first M1 A1 oe Eg $\frac{4584}{9900}$ or 0.4630 Accept 0.463(0303...) rounded or truncated to at least 3 dp
	With replacement method $\frac{2}{100} \times \frac{7}{100}$ or $\frac{14}{10000}$ or $\frac{68}{100} \times \frac{68}{100}$ or $\frac{4624}{10000}$ oe $\frac{2}{100} \times \frac{7}{100} + \frac{7}{100} \times \frac{2}{100} + \frac{68}{100} \times \frac{68}{100}$ or $\frac{1163}{2500}$ or 0.4652 oe			M1 M1 Implies first M1
				Total 7 marks