

# Oxford Revise | Edexcel GCSE Maths Foundation | Answers

## Chapter 27 Theoretical probability, mutually exclusive events, possibility spaces, and probability experiments

Question	Answer	Extra information	Marks
27.1 (a)	$\frac{3}{10}$		1
27.1 (b)	6		1
27.2 (a)	$0.85 \times 60 = 51$		1
27.2 (b)	$0.85 \times 170 = 144.5$	Solve	1
	160 on-time reports is more than expected.	Compare with part (a)	1
27.3 (a)	There are three 4's on the eight sides, so the probability of landing on 4 is: $\frac{3}{8}$		1
27.3 (b)	Probability of landing on 3 is: $\frac{2}{8} = \frac{1}{4}$		2
	Throwing 40 times means we expect it to land on 3 a total of $\frac{1}{4} \times 40 = 10$ times		
27.4 (a)	$\frac{1}{6}$		1
27.4 (b)	$\frac{1}{2}$		1
27.4 (c)	$\frac{1}{3}$		1

Question	Answer	Extra information	Marks
27.5 (a)	<i>A</i>		1
27.5 (b)	<i>C</i>		1
27.5 (c)	<i>B</i>		1
27.6	$\frac{2}{3}$		1
27.7 (a)	Letter <i>A</i>		1
27.7 (b)	$\frac{4}{5}$	Accept 0.8	1
27.8	$x + x + \frac{1}{2} = 1$	$x + x + \frac{1}{2} = 1$ or $2x = \frac{1}{2}$	1
	$2x = \frac{1}{2}$		1
	$x = \frac{1}{4}$	Correct answer	
27.9	$1 - 0.1 = 0.9$  The probability that it will not snow is 0.9		1
27.10 (a)	$\frac{1}{50}$ or 0.02		1

Question	Answer	Extra information	Marks																									
27.10 (b)	There are six multiples of 8 under 50.	$\frac{6}{50}$ or $1 - \text{your } P(\text{multiple of } 8) \text{ or for } 44$	1																									
	Thus, 44 of the numbers are not multiples of 8		1																									
	$P(\text{not a multiple of } 8) = \frac{44}{50} = \frac{22}{25}$	Correct answer, simplified or not																										
27.11 (a)	$P(\text{orange}) = 1 - (0.3 + 0.15 + 0.26) = 0.29$	$1 - (0.3 + 0.15 + 0.26)$ or $1 - 0.71$	1																									
		Correct answer	1																									
27.11 (b)	$P(\text{not white or pink}) = 1 - P(\text{pink or white})$  $= 1 - (0.3 + 0.26) = 0.44$	Either put 0.3 and 0.26 together and subtract from 1, or put 0.15 and 0.29 together	1																									
		Correct answer	1																									
27.11 (c)	$P(\text{yellow}) = 0.15$ Yellow counters = $200 \times 0.15 = 30$	$200 \times 0.15$	1																									
		Correct answer	1																									
27.12 (a)	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>+</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> </table>	+	1	2	3	4	1	2	3	4	5	2	3	4	5	6	3	4	5	6	7	4	5	6	7	8	No more than 2 errors	1
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		1	2	3	4	5																						
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4	5	6	7	8																								
Correctly filled out	1																											
27.12 (b)	$\frac{3}{16}$		1																									

Question	Answer	Extra information	Marks
27.13 (a)	<pre> graph LR     A((40)) --- B[Glasses]     A --- C[No glasses]     B --- D((16))     C --- E((24))     D --- F[Pass]     D --- G[Fail]     E --- H[Pass]     E --- I[Fail]     F --- J((7))     G --- K((9))     H --- L((9))     I --- M((15))         </pre>	<p>No more than 1 error Correct answer</p>	<p>1 1</p>
27.13 (b)	$\frac{7}{40}$ o.e		1
27.13(c)	$\frac{3}{8}$ o.e		1
27.14 (a)	Frequency of pin down = 15	15	1
	Relative frequency of Pin up = 0.7	0.7	1

Question	Answer	Extra information	Marks
27.14 (b)	$\frac{55}{150} = \frac{11}{30}$	Adding the results of the 100 drops to the 50 drops in part (a) Correct answer	1 1
27.15 (a)	$2x + 4 = 9$ $2x = 9 - 4$ $2x = 5$ $x = 2.5$	$2x = 5$ Correct answer	1 1
27.15 (b)	$19 = 3y - 2$ $19 + 2 = 3y$ $21 = 3y$ $7 = y$ $y = 7$	$3y = 21$ Correct answer	1 1
27.15 (c)	$-4 = 5q + 6$ $-4 - 6 = 5q$ $-10 = 5q$ $-2 = q$ $q = -2$	$5q = -10$ Correct answer	1 1
27.16	$(8 - 2) \times 180 = 1080^\circ$	$(8 - 2) \times 180$ Correct answer	1 1