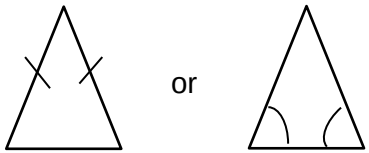
Question			Answer	Marks	Part marks and guidance	
1	(a)		17	1		
1	(b)		49	1		
1	(c)		21 and 39	1		Accept in either order
2			18	2	**M1** for $\frac{4\times9}{2}$ oe	
3	(a)		$\frac{1}{4}$	1		Accept equivalent fractions
3	(b)		$\frac{3}{5}$	1		Accept equivalent fractions
4	(a)	(i)	[Shape A] parallelogram [Shape B] [regular] hexagon	2	**B1** for each correct name correctly placed.	Condone poor spelling Do not allow e.g. hectagon or hectogon
4	(a)	(ii)	2	1		
4	(b)		 or	1		No contradictions If sides and angles indicated mark the worst Use of arrows on sides is 0 marks The number of "lines" on equal sides must be the same. Allow 70, 70, 40 labelled as angles **with** correct notation. 70, 70, 40 alone is 0 marks Ignore all other additions e.g. numbers for length/angles and lines of reflection and apply the scheme
5	(a)		38	1		
5	(b)		15	2	**B1** for [January] 45 or [March] 30	**B1** mark may be awarded on bar chart

Question			Answer	Marks	Part marks and guidance	
5	(c)		Correct bar drawn for April	1		Accept good freehand Clear intention Accuracy - use overlay as a guide must touch both circles Bar width must be consistent with other months
5	(d)		Incorrect oe and shows [50% of 30 oe =] 15 is not equal to 18. or shows [50% of 30 oe =] 15 is not equal to 12. or shows [18 x 2 =] 36 is not equal to 30 or Incorrect oe and shows [$\frac{18}{30}$ [× 100] =] 60% or [$\frac{12}{30}$ [× 100] =] 40%	2	**M1** for [50% of 30 oe =] 15 or for [18 x 2 oe =] 36 or **M1** for [$\frac{18}{30}$ [× 100] oe =] 0.6, 60 or 60% or for [$\frac{12}{30}$ [× 100] oe =] 0.4, 40 or 40%	For 2 marks candidates must: state incorrect oe and use comparable numbers: 15 and 18, 15 and 12, 36 and 30 or state 40% or 60% After candidates have made the above comparison isw any comments
6	(a)	(i)	4	1		
6	(a)	(ii)	8	1		
6	(b)		6 × (10 ÷ 2 – 4) = 6	1		Do not allow more than one bracket
7	(a)		[0].8[0]	1		
7	(b)		6	1		

Question			Answer	Marks	Part marks and guidance	
7	(c)		$5\frac{1}{3}$	1		
8			700 cao	3	Working in ml: **B2** for 800 identifiable as the final amount of water in one or both bottles, may be without working OR **M2** $\frac{1500+100}{2} - 100$ or $\frac{1500-100}{2}$ OR **B1** for [1.5 l =] 1500 [ml] **M1** for $\frac{1500+100}{2}$ or $\frac{figs\ 15+100}{2}$ or for $\frac{figs 15-100}{2}$ or for at least two new correct pairs of values where A + B = *their* 1500 + 100	Working in litres: **B2** for answer of 0.7 or 0.8 identifiable as the final amount of water in one or both bottles, may be without working OR **M2** $\frac{1.5+0.1}{2} - 0.1$ or $\frac{1.5-0.1}{2}$ OR **B1** for [100 ml =] 0.1 [l] **M1** for $\frac{1.5+0.1}{2}$ or $\frac{1.5+figs\ 1}{2}$ or for $\frac{1.5-figs\ 1}{2}$ or for at least two new correct pairs of values where A + B = 1.5 + *their* 0.1
9	(a)		5*x* + 4*y* final answer	2	**B1** for final answer 5*x* + *ky* or *kx* + 4*y* or for correct answer seen then spoiled	Accept e.g. 5*x* alone or 4*y* alone for **B1**
9	(b)	(i)	10 – 5*x* final answer	1		
9	(b)	(ii)	$2x^2 + 6x$ final answer	2	**B1** for $2x^2$ or 6*x* in final answer or for correct answer seen then spoiled	

Question			Answer	Marks	Part marks and guidance	
10			$\frac{4 \times 20}{2}$ and answer 40	3	**B2** for $\frac{4 \times 20}{2}$ or **B1** for two of 4, 20 or 2 seen If 0 scored and no workings seen instead award **SC1** for answer of 40.	Condone trailing zeros
11			$\frac{3}{5}$ cao	3	**B2** for $\frac{75}{125}$ oe OR **B1** for 75 or 125 or $1\frac{1}{4}$ oe or $2\frac{5}{60}$ oe or for *their* fraction fully simplified to a proper fraction	Ignore units For **B** marks accept crossed out common terms, treat as cancelling not deletion oe for B2 include 60% and 0.6 **B1** must not come from wrong working. For **B1** allow decimal equivalents 1.25 or 2.08[33..]
12	(a)	(i)	5	1		Do not allow 5*x* or $\frac{5}{1}$
12	(a)	(ii)	37	1		

Question			Answer	Marks	Part marks and guidance	
12	(b)		$x = \frac{y-2}{5}$ oe final answer	2		Allow for 2 marks: $x = \frac{2-y}{-5}$ and $x = \frac{y}{5} - \frac{2}{5}$ If final answer $x = y - 2/5$ but $x = \frac{y-2}{5}$ is clearly seen in their working award 2 marks
					M1 for $y - 2 = 5x$ or for $\frac{y}{5} = x + \frac{2}{5}$ or for answer $\frac{y-2}{5}$	
					If 0 scored **SC1** for correct step to final answer FT incorrect first step	**SC1** only awarded for 2 step attempts and where *their* answer x = includes 2, 5 and y Incorrect first step must be seen and then correct step to their final answer for **SC1**
13			(13, 6)	3	**B2** for answer (13, *k*) or (*k*, 6)	
					or **M1** for identifying any correct distance	The correct distance must be 3, 8, 5 or 11, but they must be correctly shown, this may be shown on the diagram Seeing 3, 8, 11 or 5 from calculations or in co-ordinates alone is M0
					or identify on diagram point (13, 9) or (5, 6)	Condone missing bracket for coordinates.
14	(a)		20, 20 and 5 nfww	3	**B2** for [£]45 or **M1** for 30 × 1.5[0]	Accept answers in any order

14	**(b)**		350 with correct working	**5**		Correct working requires evidence of **M4** or **M2A1** Need to see supporting **M** marks to award **A** marks, otherwise **SC** applies All M marks may be seen performed in steps
					M4 for $16 \times 50 \times \frac{7}{10} \times \frac{5}{8}$ oe or 35 x 10 after **M1** awarded	Allow **M4** for $\frac{7}{10}$ x 50 x 10
					or **M2** for $16 \times 50 \times \frac{7}{10}$ oe	Allow **M2** for 16 x 35
					or $16 \times 50 \times \frac{5}{8}$ oe	Allow **M2** for 10 x 50
					or $16 \times 50 \times \frac{3}{10} \times \frac{5}{8}$ oe	Allow **M2** for 10 x 15
					A1 for 560 or 500 or 150	
					or **M1** for 16×50 or $16 \times \frac{5}{8}$ oe or $50 \times \frac{7}{10}$ oe	1 litre = 10 miles implies **M1 A1**
					A1 for 800 or 10 or 35	$\frac{7}{10}$ oe of 50 = 35 or $\frac{5}{8}$ of 16 = 10 implies **M1 A1** $\frac{7}{10} = \frac{35}{50}$ implies **M1** but 35 must be stated or used for **A1** $\frac{7}{10}$ of 50 or $\frac{5}{8}$ of 16 alone is **M0**
					If 0, 1 or 2 scored instead award **SC3** for answer 350 with no or insufficient working	
					If 0 or 1 scored instead award **SC2** for 560 or 500 or answer of 150 with no or insufficient working	
					If 0 scored instead award **SC1** for 800 or 10 or 35 with no or insufficient working	

Question			Answer	Marks	Part marks and guidance	
15	(a)		14	1		Accept 14.0
15	(b)		[0].25 or $\frac{1}{4}$ oe	1		
16			Shows 56% or 0.56 and 0.54 or $\frac{56}{100}$ and $\frac{54}{100}$ or equivalent fractions with a common denominator or shows 13.5 [out of 25] and 14	3	**M2** for $\frac{14}{25}$ × 100 oe or 0.56 or for $\frac{54}{100}$ × 25 oe **OR** **M1** for $\frac{14}{25}$ seen or for $\frac{54}{100}$ or 0.54 seen	Allow 3 marks or **M2** for correct values/method isw other working For **M2** accept $\frac{10+4}{10+15}$×100 instead of $\frac{14}{25}$×100 For $\frac{14}{25}$ × 100 oe e.g. $\frac{14\times4}{25\times4}$ **M2** implied by 13.5 Accept 14 out of 25 seen for M1
17			$x \leq 6$ final answer	2	**M1** for $2x \leq 11 + 1$ or better or for $x - \frac{1}{2} \leq \frac{11}{2}$ or better or for answer 6 with or without equals sign or wrong inequality symbol	For **M1** allow any inequality or equals signs: e.g. **M1** for 2x > 11 + 1.

Question	Answer	Marks	Part marks and guidance	
18	40	3	**M2** for $\frac{11}{20}$ or $\frac{22}{40}$	Accept other equivalent fractions with a common denominator for M2 or M1
			or $[1]\frac{15}{20} - [1]\frac{4}{20}$ or $[1]\frac{4}{20} + \frac{22}{d} = [1]\frac{15}{20}$	**M2** implied by $\frac{22}{0.55}$
			or $\left[\frac{22}{d} =\right]\frac{35}{20} - \frac{24}{20}$ oe or $\frac{24}{20} + \frac{22}{d} = \frac{35}{20}$ oe	For **M2** accept e.g. $\frac{7\times5}{4\times5} - \frac{6\times4}{4\times5}$
				Accept e.g. $\left[-\frac{22}{d} =\right]\frac{24}{20} - \frac{35}{20}$ for **M2**
			or **M1** for $[1]\frac{3}{4} - [1]\frac{1}{5}$ oe	**M1** implied by 0.55 or [1].75 – [1].2
			or $\frac{35}{20}$ and $\frac{k}{20}$ or $\frac{k}{20}$ and $\frac{24}{20}$	
			or $[1]\frac{15}{20}$ and $[1]\frac{p}{20}$ or $[1]\frac{p}{20}$ and $[1]\frac{4}{20}$	$p < 20$
			OR	
			M2 for $7 \times 5 \times d - 6 \times 4 \times d = 22 \times 5 \times 4$ or better	$35d - 24d = 440$
			or **M1** for $\frac{6\times d+22\times5}{5d} = \frac{7}{4}$ oe	$\frac{6d+110}{5d} = \frac{7}{4}$
			or $\frac{4\times6\times d+22\times5\times4}{20d} = \frac{7\times5\times d}{20d}$ oe	$\frac{24d+440}{20d} = \frac{35d}{20d}$

Question			Answer	Marks	Part marks and guidance	
19	(a)		8 with correct working	4	**B3** for answer 7 with correct working OR Listing: **M3** for [10], 80, 150, 220, 290, 360, 430, 500 or for 70, 140, 210, 280, 350, 420, 490 or **M2** for two correct lists up to at least the first common term 80 or 70 or **M1** for a list with at least [10,] 24, 38, 52, 66, 80 or [10,] 45, 80 or a list with at least 14, 28, 42, 56, 70 or 35, 70 OR Calculation: **M3** for (500 – 10) ÷ 70 [+ 1] oe or **M2** for 2 × 5 × 7 implied by LCM = 70 or **M1** for showing prime factors of 14 and 35 [14 =] 2, 7 and [35 =] 5, 7 If **0** or **1** scored, instead award **SC2** for answer 8 with no or insufficient working If **0** scored, instead award **SC1** for answer 7 with no or insufficient working	Correct working requires evidence of at least **M2** If answer 8 and **M2** earned award 4 marks If answer 7 and **M2** earned award **B3** If candidate uses both listing and calculation methods, mark the better of these methods e.g. [10,] 24, 38, 52, 66, 80 and [10,] 45, 80 or 14, 28, 42, 56, 70 … and 35, 70. isw errors beyond 80 or 70 for **M2** but not **M3** isw any errors beyond these values For **M3** accept e.g. 10 + 70(*n* [–1]) = 500 Condone e.g. HCF = 70 but 70 must come from use of prime factors Allow e.g. 2, 7 and 5, 7 on factor trees or in Venn diagram Do not award **SC2** if clearly from wrong working Do not award **SC1** if clearly from wrong working

Question			Answer	Marks	Part marks and guidance	
19	**(b)**		14*n* – 4 oe final answer	**2**	**B1** for answer 14*n* + *k* oe or –4 + *pn* oe ($p \neq 0$) or for correct answer seen then spoilt	Accept unsimplified for 2 marks or B1 Condone *n* = 14*n* – 4, Condone use of other variable e.g. 14*x* – 4 for 2 marks or **B1**
20			Draws ruled line *y* = *x* – 1 **and** [*x* =] 2 [*y* =] 1	**4**	**M2** for drawing ruled line *y* = *x* – 1 or **M1** for correct but freehand or for ruled line with gradient 1 or for ruled line with gradient ≥ 0 passing through (0, -1) **B2FT** for *x* = 2 and *y* = 1 or **B1FT** for one correct value	Accuracy - use overlay as a guide must touch circles For M2 must pass through (0, –1) and intersection with $y = 2 - \frac{1}{2}x$ For gradient ≥ 0 accept horizontal line but not vertical. Allow correct or FT for **B2** and **B1** **FT** *their* straight line, which may be freehand. If more than one line apply choice rule. Correct readings for *x* and *y* +/- 0.2 and their reading should be within the same grid square of the intersection of the two lines.

Question			Answer	Marks	Part marks and guidance	
21			incorrect oe and shows [30 ÷ (7 – 2) × 14 =] 84 oe	5	**M4** for 30 ÷ (7 – 2) × 14 oe or total 84 or **M3** for 30 ÷ (7 – 2) × *k* oe where *k* = 1, 2, 5, 7 or 14 or **B3** for [totals] 140 **and** 210 or **B2** for [total] 140 **or** 210 or **M1** for 30 ÷ (5 – 2) × *k* oe where *k* = 1, 2, 5, 7 or 14 or for 30 ÷ (7 – 5) × *k* oe where *k* = 1, 2, 5, 7 or 14	Accept for **M4** e.g. 12 + 30 + 42 For all marks isw other totals/working, could use trials to reach acceptable totals **M3** may be implied by 12 , 30 and 42 seen If method not shown **M1** may be implied by 20, 50 and 70 seen If method not shown **M1** may be implied by 30, 75 and 105 seen
22			ABC or CBA CB or BC AB or BA and opposite sides of a rectangle are equal oe SAS oe	**B1** **B1** **B1** **B1dep**	 Dependent on previous **B1B1B1**	Must use 3-letter notation See Appendix 1 for comment isw any comment made if SAS stated See Appendix 2 for SAS oe
23			$\frac{1}{16}$ or 0.0625	2	**B1** for $\frac{1}{2^4}$ or 16^{-1} isw	isw for 2 marks once correct answer seen 16 alone is **M0**

<table>
<tr><th colspan="3">Question</th><th>Answer</th><th>Marks</th><th colspan="2">Part marks and guidance</th></tr>
<tr><td>24</td><td></td><td></td><td>Correct two-way table constructed and completed

<table><tr><td></td><td>Autumn</td><td>Spring</td><td>Summer</td></tr><tr><td>Class A</td><td>90</td><td>120</td><td>40</td></tr><tr><td>Class B</td><td>63</td><td>126</td><td>47</td></tr></table></td><td>6</td><td>

B3 for 63 and 126
or B2 for 63 or 126
or M1 for 120 × 1.05 oe or for [5% =] 6
or for $\frac{7}{10}$ × 90 oe or for $\left[\frac{3}{10} =\right]$ 27

M2 for correctly designed table with headings
or M1 for 3 by 2 or 2 by 3 table with no headings or error[s] in headings

A1 (dep on M2 or M1 for table) for six correct or FT entries placed consistently in table</td><td>For all marks ignore additional columns or rows on table for attempts to find totals

Ignore extra rows if not used

For M and A marks ignore calculations in cells alongside values in 3 by 2 table

Accept e.g. 3 by 2 table
Condone internal/external lines omitted in table
Accept abbreviated heading e.g. A S S
Allow table headings in any order

FT their 63 and their 126</td></tr>
</table>

Question			Answer	Marks	Part marks and guidance	
25	(a)		Tree diagram correctly completed with probabilities 0.3 oe on all scores branches and 0.7 oe on all does not score branches	2	**B1** for a correct pair of branches. or for 0.3 oe on all scores branches or for 0.7 oe on all does not score branches	
25	(b)		0.42 oe	3	**M2** for *their* 0.3 × *their* 0.7 + *their* 0.7 × *their* 0.3 oe or 1 – (*their* 0.3 × *their* 0.3 + *their* 0.7 × *their* 0.7) or **M1** for *their* 0.3 × *their* 0.7 or *their* 0.7 × *their* 0.3 oe	isw attempted cancelling or conversion after correct answer seen Products may be given at the end of the branches in the tree diagram, however they must be used in final answer $\frac{0.42}{1}$ scores **M2** only For all FT marks *their* probabilities must be $0 < p < 1$

Question			Answer	Marks	Part marks and guidance	
26			8 with correct working	6		Correct working requires evidence of at least **M1 and M1dep** If candidates use numerical values for π, allow 3.1 or 3.14… or $\frac{22}{7}$. If candidates use other values e.g. 3 they must state $\pi = 3$
					M2 for $\frac{120}{360} \times \pi \times 12^2$ oe or **M1** for $\frac{120}{360}$ oe $\times k\pi$ or $\pi \times 12^2$ or $k \times \pi \times 12^2$	For **M1** *k* must be numerical and > 0 **M1** may be implied by 144π
					A1 for $48\,\pi$	Award **M2 A1** if **M1 A1** seen Award M and A marks for the area of sector even if not used to find final answer and not contradicted.
					AND	
					M1dep for $their\ 48\pi \div 3 \times 4$ or for $their\ 48 \div 3 \times 4$	Dependent on **M1.** Implied by 64π implied by 64
					M1dep for $[\pi \times]r^2 = [\pi \times](their\ 48 \div 3 \times 4)$	e.g. $\pi r^2 = 64\pi$ or $r^2 = 64$ or $r = \sqrt{64}$. Dependent on previous **M1dep** If candidates only use trials to find square root, they must obtain the correct answer.
					If 0 or 1 scored instead award **SC2** for *r* = 8 with no/insufficient working	Do not award **SC2** if clearly from wrong working
					or if 0 scored award **SC1** for area of sector = $48\,\pi$	Do not award **SC1** if clearly from wrong working