Question			Answer	Marks	Part marks and guidance	
1	(a)		Correct bar drawn	1		condone freehand
	(b)	(i)	Germany	1		
		(ii)	25	1		
		(iii)	6	1		
2	(a)		Cylinder	1		
	(b)		90º symbol marked at BCD cao	1		Accept 90º with arc
3			364.8[0]	2	**M1** for 320 × 1.14	
4	(a)	(i)	Any even number	1		Accept more than one, if all even
		(ii)	1 or 5 or 25	1		Accept more than one, if all correct Condone 1 × 25 or 5 × 5
		(iii)	11 or 13 or 17 or 19	1		Accept more than one, if all correct
		(iv)	Any cube number	1		Accept more than one, if all correct Do not accept e.g. 2 ×2 × 2 or 2^3
	(b)		7	2	**M1** for 5, 7 and 7, 13	Could be a correct Venn diagram
5	(a)		1 : 19	1		
	(b)		12	2	**M1** for 8 ÷ 2 soi by 4 or 8 × 1.5 oe	
6	(a)		10 final answer	1		
	(b)		4 final answer	1		
7	(a)		81.5 or 8.15×10^1 cao	1		
	(b)		0.005 69 or 5.69×10^{-3} cao	1		
8			[y =] $\frac{x}{3}$ + 9 or [y =] $x \div 3 + 9$ final answer	2	**M1** for [y =] $\frac{x}{3}$ + k *or* [y =] $jx + 9$	$j \neq 0$

Question			Answer	Marks	Part marks and guidance	
9			15 with correct supporting working	5	**M1** for 140 ÷ 7 soi by 20 **M1** for 4 × *their* 20 and 3 × *their* 20 soi by 80 and 60 **M1** for *their* 80 ÷ 5 or their 60 ÷ 4 **A1** for 16 and 15 or **M1** for 140 ÷ 9 soi by 15.5 **M1** for 15 × 5 and 15 × 4 soi by 75 and 60 **M1** for 140 ÷ 7 soi by 20 **M1** for 4 × *their* 20 and 3 × *their* 20 soi by 80 and 60 **SC1** for 15 without working	Accept correct alternative methods their 20 must come from a division of 140 15 from incorrect working scores 0
10			Vertices at (4, 8) (8, 2) (4, 2)	3	**B2** for 2 vertices correct **M1** correct enlargement incorrect position	Condone freehand if vertices ±2mm by eye
11	(a)		(2, 4)	1		
	(b)		Q plotted at (-1, 2)	1		
12			23	2	**M1** for 8 + 3 × 5 or better	
13			31.4[2] or 31.41…	2	**M1** for π × 10 oe	Method can be spoiled
14	(a)	(i)	7 cao	1		Do not allow a7 or a^7
		(ii)	12 cao	1		Do not allow $b12$ or b^{12}
	(b)		$9x(2x + 1)$ final answer	2	**B1** for $9(2x^2 + x)$ or $x(18x + 9)$ or $3x(6x+3)$ or $3(6x^2+3x)$	condone final bracket missing

Question			Answer	Marks	Part marks and guidance	
15	(a)		Medium with correct comparisons **and** valid reason	4	**M3** fully correct method and values to compare all 3 packs Or **M2** fully correct method to compare all 3 packs Or **M1** for fully correct method to compare any 2 packs After **M0 or M1 SC2** for 3 correct comparable values	Condone 150 or [£]3.55 for medium Accept fully correct alternative methods Accept consistent working in pence or pounds SC2 **replaces** M1
	(b)		Correct statement	**1**		Do not accept contradictory statements See exemplars
16			$7x + 2$ final answer	**4**	**B2** for $28x + 8$ or **B1** for $28x + k$ or $jx + 8$ or **M1** for $5x + 3 + 7x + 4 + 9x – 10 + 5x + 8 + 2x + 3$ AND **M1** for *their* $(28x + 8) \div 4$ soi	$j \neq 0$ B1 not from only one side e.g. $5x + 8$ must be an algebraic expression in the form $ax + b$

Question			Answer	Marks	Part marks and guidance	
17			246	6	**B1** for $6\frac{1}{2}$, 6.5 or 6 h 30 m AND **M2** for *their* $6\frac{1}{2}$ × 2 × 12 soi by 156 or **M1** for *their* $6\frac{1}{2}$ × 12 soi by 78 or *their* $6\frac{1}{2}$ × 2 AND **M2** for 12 × $1\frac{1}{2}$ × 5 soi by 90 or **M1** for 12 × $1\frac{1}{2}$ soi by 18 or $1\frac{1}{2}$ × 5 soi by $7\frac{1}{2}$ or 12 × 5 soi by 60	13, 78 or 156 imply B1

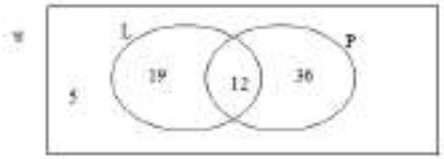
Question			Answer	Marks	Part marks and guidance	
18			10:50 [am]	4	**SC3** for 10:50 pm OR **B2** for LCM as 140 or 2 hours 20 [min] and **M1** for [0] 8:30 plus *their* LCM OR **M1** for 20 = 2 x 2 x 5 and 35 = 5 x 7 and **M1** for [0]8:30 plus *their* LCM OR **B1** for listing [0]8:50, [0]9:10, [0]9:30 and **B1** for listing [0]9:05, [0]9:40, 10:15	*Their* LCM must be correctly converted to hours and minutes No incorrect times in between [0]8:30 and [0]9:30 or [0]8:30 and 10:15

Question			Answer	Marks	Part marks and guidance	
19			Arc centre D radius 6 cm meeting AD and DC or DC and bisector of ABC	2	**B1** for any arc centre D	Accept dashed or dotted for all marks Arc must be complete within ABCD not freehand Allow beyond AD and DC for 1 or 2 marks Tolerance 5.8 to 6.2 cm
			Ruled bisector of angle ABC to reach DC with construction arcs or Bisector with construction arcs from ABC to *their* arc centre D	2	**B1** for correct ruled bisector at least 2cm long by eye with no construction arcs	Tolerance $\pm$ 2°
			Correct region shaded	1	**Dep** on **B2** and at least **B1**	
20			28.8	3	**M2** for $\sqrt{30^2 - 8.4^2}$ or **M1** for $x^2 + 8.4^2 = 30^2$ oe	Allow answer of 29 after M2 scored

Question			Answer	Marks	Part marks and guidance	
21			8 cao	4	**M3** for $\frac{their60\times2.25-125}{125}$ soi [0].08 or **M2** for *their* 60×2.25 – 125 soi 10 or **M1** for 60×2.25 soi 135	allow work in £ or p, alt method : **M3** for $\frac{their60\times2.25}{125}-1$ soi [0].08 or **M2** for *their* 135 ÷ 125 soi by 1.08 or 108% or **M1** for 60×2.25 soi 135 OR **M3** for $\frac{2.25-their125\div60}{their125\div60}$ soi[0].08 or **M2** for 2.25 – *their* 125 ÷ 60 soi 0.16[6…] or 0.17 or **M1** for 125 ÷ 60 soi 2.08[3…]

Question			Answer	Marks	Part marks and guidance	
22	(a)		a correct distance conversion e.g. 400 ÷ 1000 or [0].4 or 5 × 1000 or 5000	M1	accept any correct method	
			a scale factor e.g. 5[000] ÷ 400 soi by figs 125 or 840 ÷ 66 soi by 12.727…or 12.73 or figs 127	M1		
			correct time conversion e.g. 14 × 60 or 840 or 66 ÷ 60 or 1[m] 6[s] or 1.1 or 825 ÷ 60	M1		
			correct figures e.g. 13.75 or 13.7 or 13.8 [14] 5.09… or 5.1 [5] 5090[. …] or 5100 5000 825 840 12.5 12.7… 5.95 or 5.9 or 6 6.06… or 6.1	A1	Dep on M3	
	(b)		an acceptable response e.g. [he will not maintain this rate because] he will get tired	1		Accept any correct reason must not be contradicted.

Question			Answer	Marks	Part marks and guidance	
23			15.38 cao	**6**	**M2** for 6400×1.025^8 oe soi by 7797.78 or **M1** for 1.025^k (k>1) soi 6724 AND **M2** for 6400 + 6400 × [0].027 × 8 oe soi 7782.4 or **M1** for 6400 × [0].027 oe soi 172.8 or 1382.4 AND **M1** for subtracting *their* two totals or *their* two interests e.g. *their* 7797.7785… − *their* 7782.4 or *their* 1397.78 – *their* 1382.4	
24	**(a)**		0.6 0.7, 0.3, 0.7, 0.3 (White), not white, white, not white	**1** **1** **1**		Alternative answer 0.7, 0.3, 0.3, 0.7 (White), not white, not white, white
	(b)		[0].12	**2**	Correct or ft *their* 0.3 **M1** for 0.4 × 0.3 ft *their* 0.3	isw incorrect conversions after 0.12
25			28 or [£][0] .28	**5**	**B1** for $7r + 15c = 7[00]$ or $[r =] c + [0.]12$ **M1** for $7(c + [0.]12) + 15c = 7[00]$ or better oe or $r – c = [0.]12$ **M1** for $7c + 84 + 15c = 7[00]$ or better oe or $7r – 7c = [0.]84$ **M1** for $15c + 7c = 7[00] – [0.]84$ or better	Allow any pair of letters, Trial-and-improvement will score 0 or 5 only allow work in pence or pounds i.e. removing brackets i.e. rearranging their equation
26			$33 – 5n$ oe	**2**	**M1** for $– 5n + k$ oe or for $mn + 33$ oe ($m \neq 0$)	condone use of other variable condone $n = 33 – 5n$ for 1 mark

Question			Answer	Marks	Part marks and guidance	
27	(a)			3	**B2** for three correct entries ignore labels or **B1** for one element in the correct place	
	(b)		$\frac{36}{72}$ oe	**2**	**FT** *their* labelled Venn diagram (2 sets) for **2** marks e.g. $\frac{their36}{72}$ **B1** for $\frac{k}{72}$ where k < 72	isw cancelling and conversion, accept 50% for **2** marks