


Qn	Working	Answer	Mark	Notes
1		0.625	1	B1
				Total 1 mark
2		26	1	B1
				Total 1 mark
3	108 – 3 (= 105) or $x \div 5$ where x is found value from first stage $(108 - 3) \div 5$ oe		2	M1 Allow 108 – 3 \div 5 or – 3 \div 5 with the correct order indicated eg with arrows
		21		A1 cao If no marks scored SCB1 for 107.4 or 543
				Total 2 marks

Qn	Working	Answer	Mark	Notes
4 (a)			1	B1 correct diagram drawn
(b)		12, 15	1	B1
(c)		30	1	B1
(d)	eg Pattern number 25 needs 75 counters (or $3 \times 25 = 75$) or 70 counters can make only up to Pattern number 23 $\frac{70}{25} = 2.8$ or $\frac{70}{3} = 23.(3\dots)$ 70 is 5 short or sight of e.g. $3n$ or ...69, 72, ... 70 is not a multiple of 3	No and reason	1	B1 'No' with reason given (reason can be in words or shown as a calculation)
				Total 4 marks

Qn	Working	Answer	Mark	Notes
5	eg $3 \times 2.45 (= 7.35)$ or $2 \times 6.2(0) (= 12.4(0))$ or $3 \times 2.45 + 2 \times 6.2(0) (= 19.75)$		4	M1 for working out the cost of the seeds or the compost or the seeds and the compost
	eg $34.35 - "7.35" - "12.40" (= 14.6(0))$ or $34.35 - "19.75" (= 14.6(0))$			M1 for working out the cost of the 4 plant pots
	"14.60" \div 4			M1 for a complete method to find the cost of one plant pot
		3.65		A1 If no other marks awarded, SCB2 for answer of 6.42 – 6.43 SCB1 for 25.7(0)
				Total 4 marks

Qn	Working	Answer	Mark	Notes																				
6 (a)	<table border="1"> <thead> <tr> <th></th> <th>32 GB</th> <th>64 GB</th> <th>128 GB</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>type A</td> <td>75</td> <td>37</td> <td>83</td> <td>195</td> </tr> <tr> <td>type B</td> <td>52</td> <td>29</td> <td>24</td> <td>105</td> </tr> <tr> <td>Total</td> <td>127</td> <td>66</td> <td>107</td> <td>300</td> </tr> </tbody> </table>		32 GB	64 GB	128 GB	Total	type A	75	37	83	195	type B	52	29	24	105	Total	127	66	107	300		3	B3 For all correct entries (B2 for 4 or 5 correct entries) (B1 for 2 or 3 correct entries)
		32 GB	64 GB	128 GB	Total																			
	type A	75	37	83	195																			
type B	52	29	24	105																				
Total	127	66	107	300																				
(b)		$\frac{29}{300}$	1	B1 oe eg 0.096(666...)																				
(c)		$\frac{83}{195}$	2	B2 oe eg 0.42(564...) (B1 for $\frac{83}{m}$ where $m > 83$ or $\frac{n}{195}$ where $n < 195$)																				
				Total 6 marks																				

7 (a)	eg 15.59 or 0.477 or 0.478 or 0.4778 or 0.4779 or $\frac{745}{1559}$		2	M1 for calculating the denominator or for answer with 3 or 4 dp or for the correct fraction
		0.47787(04298...)		A1 must have minimum of 5 dp
(b)		0.478	1	B1ft dep on at least 4 decimal places
				Total 3 marks

Qn	Working	Answer	Mark	Notes
8	2 m written as 200 cm or 35 cm written as 0.35 m		3	B1 made be seen in workings
	“200” \div 35 or 2 \div “0.35” ($= \frac{40}{7}$ or 5.714...) or indication of 175 (cm) or 1.75 (m)			M1 or clearly adding on 35 or 0.35 at least 5 times with no more than one error or clearly subtracting 35 or 0.35 at least 5 times from 200 or 2 with no more than one error ft incorrect conversion but attempt must have been made to convert
		25		A1
				Total 3 marks

9 (a)(i)		58	1	B1
(ii)	Vertically <u>opposite angle(s)</u> are equal or <u>Vertically opposite</u>		1	B1 reason given dep on a correct angle in (i)
(b)	$DBA = 180 - 132 (= 48)$ or for $132 - 58$		2	M1 48 could be shown clearly on diagram
		74		A1
				Total 4 marks

Qn	Working	Answer	Mark	Notes	
10	(a)(i)	25	1	B1 allow 24.5 to 25.5	
	(ii)	18	1	B1 allow 17.5 to 18.5	
	(b)	528 ÷ 1.2 (=£440)	3	M1	
		allow leeway on reading graph eg (£440 =) (“440” ÷ 20) × 37 (= 814) (£440 =) (“440” ÷ 11) × 20 (= 800) (£440 =) (“440” ÷ 10) × “18” (= 792) (£440 =) (“440” ÷ 1) × 2 (= 880) (£440 =) (“440” ÷ “25”) × 46 (= 809.6) There are several acceptable calculations			M1 value read from graph and used to scale to £440 (ft their 18 from (ii) or their 25 from (i))
			800		A1 accept in the range 770 – 880 unless working incorrect
Total 5 marks					
11	(a)	$\frac{12}{4}(=3)$ or $\frac{4}{12}(=0.\dot{3})$ or $\frac{BC}{4} = \frac{16.5}{12}$ or $BC \div 16.5 = 4 \div 12$ or $(BC =) 16.5 \div \frac{12}{4}$	2	M1 correct scale factor (given as 3 or a fraction or a ratio) or correct equation using <i>BC</i> or a correct expression for <i>BC</i>	
			5.5	A1	
	(b)		3x	1	B1 allow $3 \times x$ or $x \times 3$ ft their “3” in (a)
Total 3 marks					

Qn	Working	Answer	Mark	Notes																																								
12	$2^2 \times 7$ or $2 \times 3 \times 7$ or $3^2 \times 7$ oe or showing at least 5 correct multiples across at least 2 lists (excluding 28, 42, 63) (28) 56, 84, 112, 140, 168, 196, 224, 252 (42) 84, 126, 168, 210, 252 (63) 126, 189, 252		3	M1 accept prime factors seen in factor tree or correct position in Venn diagram for at least one of the numbers given with no other numbers for that number incorrectly placed																																								
	$2^2 \times 7$ and $2 \times 3 \times 7$ and $3^2 \times 7$ or showing at least 9 correct multiples across all 3 lists (excluding 28, 42, 63) (28) 56, 84, 112, 140, 168, 196, 224, 252 (42) 84, 126, 168, 210, 252 (63) 126, 189, 252			M1 accept prime factors seen in factor tree or correct position in Venn diagram for all 3 of the numbers given with no other numbers incorrectly placed																																								
		252		A1 or $2^2 \times 3^2 \times 7$ Dep on M1																																								
12 alt	<table border="1" style="display: inline-table; vertical-align: top;"> <tr><td>7</td><td>28</td><td>42</td><td>63</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>9</td></tr> <tr><td>3</td><td>2</td><td>3</td><td>9</td></tr> <tr><td></td><td>2</td><td>1</td><td>3</td></tr> </table> <table border="1" style="display: inline-table; vertical-align: top;"> <tr><td>7</td><td>28</td><td>42</td><td>63</td></tr> <tr><td>2</td><td>4</td><td>6</td><td>9</td></tr> <tr><td>3</td><td>2</td><td>3</td><td>9</td></tr> <tr><td>2</td><td>2</td><td>1</td><td>3</td></tr> <tr><td>3</td><td>1</td><td>1</td><td>3</td></tr> <tr><td>(1)</td><td>1</td><td>1</td><td>1</td></tr> </table>	7	28	42	63	2	4	6	9	3	2	3	9		2	1	3	7	28	42	63	2	4	6	9	3	2	3	9	2	2	1	3	3	1	1	3	(1)	1	1	1		3	M1 For one correct row in table eg division by 7 gives 4, 6, 9 M1 Fully correct table – need only go as far as top table – we want to see prime factors along the side or prime factors along the sides and bottom (condone 1's)
7	28	42	63																																									
2	4	6	9																																									
3	2	3	9																																									
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		252		A1 or $2^2 \times 3^2 \times 7$ Dep on M1																																								
				Total 3 marks																																								

Qn	Working	Answer	Mark	Notes
13	one of: Flour - $\frac{150 \times 10}{1500} \times 1.30 (=1.30)$ Choc spread - $\frac{10 \times 250}{500} \times 2.60 (=13)$ Eggs - $\frac{3 \times 10}{6} \times 1.10 (= 5.50)$	one of Flour - $\frac{150}{1500} \times 1.30 (=0.13)$ Choc spread $\frac{250}{500} \times 2.60 (=1.30)$ Eggs $\frac{3}{6} \times 1.10 (=0.55)$	5	M1 No need for labels
	at least two of: Flour - $\frac{150 \times 10}{1500} \times 1.30 (=1.30)$ Choc spread - $\frac{10 \times 250}{500} \times 2.60 (=13)$ Eggs - $\frac{3 \times 10}{6} \times 1.10 (= 5.50)$	at least two of Flour - $\frac{150}{1500} \times 1.30 (=0.13)$ Choc spread $\frac{250}{500} \times 2.60 (=1.30)$ Eggs $\frac{3}{6} \times 1.10 (=0.55)$		M1 No need for labels
	$120 \times 0.4 (= 48)$ oe	$12 \times 0.4 (= 4.80)$		M1 indep
	(profit =) “48” – “1.30” – “13” – “5.50” or “48” – “19.80”	(profit =) 10(“4.80” – “0.13” – “1.30 – “0.55”) or 10(“4.80” – 1.98)		M1 complete method to calculate profit by subtracting 3 amounts, all of which must be correct or from correct working
			28.2(0)	A1
				Total 5 marks

Qn	Working	Answer	Mark	Notes
14	eg $\frac{2}{5} \times 150 (= 60)$ or eg $0.32 \times 150 (= 48)$		5	M1 for finding the number of small mugs or number of medium mugs
	eg $150 - "60" - "48" (= 42)$			M1 for finding the number of large mugs
	eg $"60" \times 8.50 + "48" \times 11.20 + "42" \times 14.20 (= 1644)$ or $510 + 537.6 + 596.4 (= 1644)$			M1 for working out the income, Profit = 504 implies M3
	eg $\frac{"1644"-1140}{1140} \times 100$ or $\frac{"1644"}{1140} \times 100 - 100$			M1 (indep) for a complete method to find the percentage profit for their total income (must be greater than 1140) An answer of 144 implies M4
		44		A1 44 or better (44.2105...)
				Total 5 marks
15	3 hours 15 mins = 3.25 (hours) or $3\frac{1}{4}$ (hours) or $3\frac{15}{60}$ (hours) or 195 (mins)		3	B1 For converting 3 hrs 15 minutes into hours or minutes
	$18.2 \div "3\frac{1}{4}"$ oe or $18.2 \div "195" \times 60$			M1 For use of $D \div T$ allow $18.2 \div 3.15$ or their incorrect time conversion (must be clear that this is their time conversion) If B mark awarded then the value that gained that mark must be used here to gain this method mark.
		5.6		A1 oe
				Total 3 marks

Qn	Working	Answer	Mark	Notes
16	eg $\pi \times \left(\frac{14}{2}\right)^2$ oe or $\pi \times 7^2$ oe or 49π		2	M1
		154		A1 accept 153.86 – 154
				Total 2 marks

17	$196 \div (9 - 5) (= 49)$ oe		3	M1
	$3 \times "49"$			M1
		147		A1 SCB1 for an answer from 34.5 – 34.6 or an answer of 42
				Total 3 marks

18	(a)	(5), 8, 8, 20, x , (24)	3	B3 for (5), 8, 8, 20, x , (24) where $x = 21$ or 22 or 23
				(B2 for (5), 8, 8, 20, x , (24) where x is blank or any value other than 21, 22 or 23)
				(B1 for a list with a median of 14 or a mode of 8 or the 3 rd and 4 th cards having a sum of 28 (ignoring other cards))
(b)	eg $5 \times 21 (= 105)$ or $6 \times 23 (= 138)$		3	M1
	eg $6 \times 23 - 5 \times 21$			M1
		33		A1
				Total 6 marks

Qn	Working	Answer	Mark	Notes
19	$28 \div 0.35 (= 80)$ oe eg $(28 \div 7) \times 20 (= 80)$		5	M1 indep for calculating total number of sweets
	$1 - (0.2 + 0.35) (= 0.45)$ oe or $(0.2 + 0.35) \times "80" (= 44)$ or $28 + "16" (= 44)$			M1 or for a correct equation for missing values eg $x + 2x + 0.2 + 0.35 = 1$ oe (can be implied by 2 probabilities that total 0.45 in table if not contradicted in working space)
	"0.45" $\div 3 (= 0.15)$ oe or "0.45" $\times "80" (= 36)$ or "80" $- "44" (= 36)$			M1 (or 0.15 or 0.3 seen in table – either order)
	"80" $\times "0.15"$ or "80" $\times "0.3" (= 24)$ or "36" $\div 3$ or $"36" \div \frac{3}{2} (= 24)$			M1 A correct calculation for the number of white sweets or the number of pink sweets
		12		A1
				Total 5 marks

Qn	Working	Answer	Mark	Notes
19 alt	$1 - (0.2 + 0.35) (= 0.45)$ or $100(\%) - 20(\%) - 35(\%) = 45(\%)$		5	M1 or for a correct equation for missing values eg $x + 2x + 0.2 + 0.35 = 1$ oe
	“0.45” $\div 3 (= 0.15)$ $45(\%) \div 3 (= 15(\%))$			M1 (or 0.15 or 0.3 seen in table – either order)
	$\frac{n}{28} = \frac{0.15}{0.35}$ or $\frac{\hat{n}}{0.15} = \frac{28}{0.35}$ oe or $\frac{n}{28} = \frac{0.3}{0.35}$ or $\frac{\hat{n}}{0.3} = \frac{28}{0.35}$ or $35\% = 28$ so $5\% = 4$			M1 for using proportion with an expression for n white sweets or finding 5% oe to enable calculation to 15%
	$28 \cancel{\text{¥}} \frac{0.15}{0.35}$ or $(n =) \frac{0.15 \cancel{\text{¥}} 28}{0.35}$ or $15\% = 3 \times 4$ or $28 \cancel{\text{¥}} \frac{0.3}{0.35}$ or $0.3 \cancel{\text{¥}} \frac{28}{0.35}$ or $30\% = 6 \times 4 (= 24)$			M1 a calculation using proportion that would lead to finding their n or 2n
		12		A1
				Total 5 marks

Qn	Working	Answer	Mark	Notes
20	two of: $60 \div 8 (= 7.5)$ or 7 $20 \div 8 (= 2.5)$ or 2 $24 \div 8 (= 3)$		5	M1 at least two divisions to find number of cartons for l or w or h . Could be written on sides of box
	“7” \times “2” \times “3” (= 42) or “7” \times 8 (=56) and “2” \times 8 (= 16) and “3” \times 8(= 24)			M1 correct method to find the number of cartons that fit or finding the dimensions of the occupied space
	$60 \times 24 \times 20 (= 28\,800)$ or $8 \times 8 \times 8 (= 512)$ or $(7 \times 8) \times (2 \times 8) \times (3 \times 8) (= 21\,504)$ oe eg $56 \times 16 \times 24 (= 21\,504)$			M1 method to work out volume of either B or C
	“28 800 – “42” \times “512” or “28 800” – “21504”			M1 complete method to find volume of packing material.
		7296		A1 allow 7300 from correct working
				If no marks scored SC B3 for $60 \times 24 \times 20 - “56” \times 8 \times 8 \times 8$ (= 128)
				Total 5 marks

Qn	Working	Answer	Mark	Notes
20 Alt Finding space left	two of $7 \times 8 (= 56)$, $3 \times 8 (= 24)$, $2 \times 8 (= 16)$ or two of $60 - 56 (= 4)$, $20 - 16 (= 4)$, $24 - 24 (= 0)$		5	M1 two lengths of filled space found or two lengths of empty space found.
	“4” \times 24 \times 20 (= 1920) or “4” \times 24 \times 60 (= 5760) or “4” \times “4” \times 24 (= 384) or or “4” \times 24 \times “16”(= 1536) or “4” \times 24 \times “56”(= 5376)			M1 at least one correct product seen
				M1 at least two correct products seen
	eg “1920 + “5760” – “384” or “1536” + “384” + “5376” or “5760” + “1536” or “1920” + “5376” oe			M1 complete method to find volume of packing material.
		7296		A1
				Total 5 marks

Qn	Working	Answer	Mark	Notes	
21	eg $2.5 \times 6.5 (= 16.25)$ or $0.5 \times 6.5 \times 1 (= 3.25)$ or $3.5 \times 6.5 (= 22.75)$		4	M1	M2 for $0.5(2.5 + 3.5) \times 6.5 (= 19.5)$ or $2 \times (0.5(2.5 + 3.5) \times 6.5)$ $(= 39)$
	$2.5 \times 6.5 + 0.5 \times 6.5 \times 1 (= 19.5)$ or $2 \times (2.5 \times 6.5 + 0.5 \times 6.5 \times 1) (= 39)$ or $3.5 \times 6.5 - 0.5 \times 6.5 \times 1 (= 19.5)$ or $2 \times (3.5 \times 6.5 - 0.5 \times 6.5 \times 1) (= 39)$			M1	
	$2 \times "19.5" \div 12 (= 3.25)$ or $"39" \div 12 (= 3.25)$ or $12 + 12 + 12 + 12 (= 48)$ or $4 \times 12 (= 48)$			M1	or [their area] $\div 12$ (dep on M1) or using multiples of 12 for [their area] eg area = 19.5 and $12 + 12 (= 24)$ or $2 \times 12 (= 24)$
		4		A1	dep on M2, must be from correct working
				Total 4 marks	

Qn	Working	Answer	Mark	Notes
22	$\frac{3}{8} \times \frac{5}{6}$ oe eg $0.375 \div 6 \times 5$ Allow $0.375 \times 0.83\dots$ oe	eg $\frac{3}{8} \cancel{\div} 48 = 18$ and eg $\frac{5}{6} \cancel{\div} 18 = 15$	3	M1 for showing intention to multiply the two given fractions or using a number of members that is a multiple of 48 to work out the number of right-handed children.
	eg $\frac{3}{8} \times \frac{5}{6} = \frac{15}{48}$ or $\frac{\cancel{3}^1}{8} \times \frac{5}{\cancel{6}^2}$ $0.375 \times 0.83\dots = 0.31\dots$	"15" "48"		M1 For an attempt to multiply fractions or Dividing their 15 by their 48
			$\frac{5}{16}$	A1 dep on M1
				Total 3 marks

Qn	Working	Answer	Mark	Notes
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Qn	Max score	Mean score	Mean %	Edexcel averages: scores of candidates who achieved grade:						
				ALL	5	4	3	2	1	U
1	0.83	1	83	0.83	0.96	0.93	0.83	0.67	0.34	0.15
2	0.79	1	79	0.79	0.96	0.90	0.80	0.54	0.18	0.04
3	1.71	2	86	1.71	1.93	1.88	1.74	1.43	0.68	0.24
4	3.68	4	92	3.68	3.90	3.84	3.73	3.44	2.86	1.71
5	3.39	4	85	3.39	3.86	3.64	3.45	2.76	2.12	0.43
6	4.52	6	75	4.52	5.51	4.99	4.21	3.31	1.90	0.37
7	2.24	3	75	2.24	2.81	2.47	2.14	1.59	0.63	0.11
8	2.08	3	69	2.08	2.64	2.31	1.94	1.24	0.72	0.11
9	2.57	4	64	2.57	3.54	2.94	2.15	0.93	0.46	0.16
10	3.23	5	65	3.23	4.21	3.42	2.79	2.11	1.11	0.27
11	1.73	3	58	1.73	2.68	1.97	1.02	0.37	0.04	0.08
12	1.48	3	49	1.48	2.13	1.60	1.15	0.62	0.17	0.00
13	2.60	5	52	2.60	3.85	2.66	1.96	0.99	0.48	0.26
14	2.35	5	47	2.35	3.76	2.60	1.44	0.43	0.05	0.00
15	1.45	3	48	1.45	2.34	1.50	0.84	0.42	0.09	0.03
16	0.84	2	42	0.84	1.53	0.84	0.28	0.08	0.05	0.00
17	1.10	3	37	1.10	1.97	1.04	0.46	0.16	0.06	0.00
18	2.29	6	38	2.29	4.09	2.04	1.03	0.54	0.19	0.18
19	1.81	5	36	1.81	3.31	1.60	0.65	0.30	0.10	0.05
20	1.39	5	28	1.39	2.33	1.39	0.73	0.35	0.04	0.03
21	1.19	4	30	1.19	2.31	1.01	0.33	0.11	0.04	0.00
22	0.68	3	23	0.68	1.34	0.54	0.14	0.09	0.08	0.00
	43.95	80	55	43.95	61.96	46.11	33.81	22.48	12.39	4.22

Qn	Working	Answer	Mark	Notes
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Suggested grade boundaries

Grade	5	4	3	2	1
Mark	54	40	28	17	8