1 c	162 ÷ (2 + 7) × 2 oe		2	M1	
		36		A1	

2	76 ÷ (5 + 2 – 3) (= 19) $5x + 2x - 3x = 76$, $x = 76 \div 4$ (=19) oe		4	M1
	3 × "19" (= 57)			M1
	"57" – 48.5(0)			M1
		8.5(0)		A1
				Total 4 marks

3	e.g. 36 ÷ (2 + 6) (= 4.5) **or** $36 \div \frac{2+6}{3+2+6}$ (= 49.5) oe **or** Asha = £9 **OR** Julie = £27			M1
	e.g. 3 × "4.5" **or** $"49.5" \times \frac{3}{3+2+6}$ **or** $"9" \times \frac{3}{2}$ **or** $"27" \times \frac{3}{6}$			M1 or an answer of $\frac{27}{2}$
		13.5(0)	3	A1 SCB1 for 36/5 × 6 (=43.2) or 36/9 × 2 (=8)
				Total 3 marks

4	(a)	16 : 40 or 8 : 20 or 4 : 10		2	M1 for any correct cancelling or 5 : 2
			2 : 5		A1 cao

5		120 ÷ (3 + 5) (= 15)		6	M1	M2 for $\frac{3}{8} \times 120$ (= 45) **or** $\frac{5}{8} \times 120$ (= 75) oe
		'15' × 3 (= 45) **or** '15' × 5 (= 75)			M1	
		'45' ÷ 3 (= 15) **or** '45' ÷ 3 × 2 (= 30)			M1	
		'75' × $\frac{16}{25}$ (= 48) **or** '75' × $\frac{9}{25}$ (= 27)			M1	
		E.g. ('45' ÷ 3 × 2) + ('75' × $\frac{9}{25}$) oe **or** '27' + '30' **or** ('75' – '48') + ('45' – '15')			M1 for a complete method	
			57		A1	
						Total 6 marks

6	eg (36 ÷ 9) × 5 **or** 20 [ducks] **or** 20 : 36 **or** for writing the 3 parts of the ratio correctly eg 35 : 10 : 18 oe		3	M1 for a fully correct calculation for the number of ducks or stating 20 ducks – may be shown in a ratio – does not need to be labelled if it is clear that the number or calculation refers to the number of ducks
	"20" ÷ 2 = 10 and 10 × 7 oe or $\frac{36}{18} \times 35$ oe			M1 for a correct calculation to find the number of chickens. (award the M2 for 70 : 20 : 36 or a different order if intention is clear eg by labels)
	Working not required, so correct answer scores full marks (unless from obvious incorrect working)	70		A1
				Total 3 marks

7	250 ÷ (2 + 3) (= 50)			M1
	50 × 2 (= 100) **or** 50 × 3 (= 150)			M1
	$\frac{42}{100} \times$ '150' (= 63) or 0.42 × '150' oe (= 63)			M1 (indep) for a method to find 42% of **their** amount for Haydn
	'100' – '63'			M1 (dep on M2) for finding difference between their amounts for Rose and Haydn
		37	5	A1
				Total 5 marks

7 ALT	$\frac{2}{2+3}\times 100$ (= 40)			M1	for method to find the percentage of £250 that Rose gives to charity
	$\frac{3}{2+3}\times 100\times 0.42$ (= 25.2) oe			M1	for method to find the percentage of £250 that Haydn gives to charity
	'40' – '25.2' (= 14.8)			M1	(dep M2) for method to find difference between the two percentages
	$\frac{'14.8'}{100}\times 250$ or '0.148' × 250 oe			M1	
		37	5	A1	
					Total 5 marks

8	$\frac{4}{15}\times 1200$ (= 320) **or** for $\frac{3}{15}$ or $\frac{8}{15}$ seen		4	M1	
	1200 – "320" (= 880) **and** "880" ÷ 11 (=80) **or** $\frac{3}{11}\times 880$ (= 240) oe **or** $\frac{3}{15}\times 1200$ (= 240) oe			M1	
	1200 – ("320" + "240") **or** 880 – 240 (= 640) **or** $\frac{8}{11}\times 880$ (= 640) **or** $\frac{8}{15}\times 1200$ oe			M1	
		320, 240, 640		A1	Must be on correct answer lines or clearly attributed to cake *A*, *B* and *C*, otherwise withhold final A mark.
					Total 4 marks

9	e.g. 0.7 × 20 160 oe (= 14 112) **or** 0.3 × 20 160 oe (= 6048)		4	M1	
	e.g. "14 112" ÷ (9 + 5 + 2) (= 882) **or** (20 160 – "6048") ÷ (9 + 5 + 2) (= 882)			M1	M2 for $\frac{9-2}{9+5+2}\times$ "14 112" oe
	e.g. 9 × "882" – 2 × "882"			M1	
		6174		A1	
					Total 4 marks

10	eg 10.5 ÷ (5 – 2) (= 3.5(0)) **or** $\frac{5}{7}-\frac{2}{7}\left(=\frac{3}{7}\right)$ **or** $10.5\times\frac{5}{5-2}$ (= 17.5) **or** $10.5\times\frac{2}{5-2}$ (= 7)		3	M1	for finding the value of one share **or** the difference as a fraction **or** Bella's share **or** Millie's share
	eg "3.5"×7 **or** $10.5\div\frac{"3}{7}"$ or "17.5" + "7"			M1	for a complete method
		24.5(0)		A1	oe eg $\frac{49}{2}$
					SCB1 for an answer of 3 and/or 7.5 oe
					Total 3 marks

11	$300 \div (7 + 5 + 3)$ (= 20) **clear correct use** of 7 + 5 + 3 (= 15) eg division at the end by 15 $\left(\frac{"2.8"+"1.8"}{15}\right)$ or correct use of 15 in a fraction eg $\frac{2}{5}\times\frac{7}{15}$		5	M1	(no mark for "15" unless it is used correctly) use of 7 × 20 or 140 or 5 × 20 or 100 in further work assumes this mark
	$\frac{2}{5}\times(7\times"20")$ (=56) oe eg 0.4 ×140 (= 56) or $\frac{2}{5}\times 7\left(=\frac{14}{5}=2.8\right)$ or eg $\frac{2}{5}\times\frac{7}{15}\left(=\frac{14}{75}=0.186...\right)$			M1	finding $\frac{2}{5}$ of the number of birthday cards or $\frac{2}{5}$ of the share of 7 or $\frac{2}{5}$ of fraction of amount
	0.36 × (5 × "20")(=36) or 0.36 × 5 (= 1.8) or eg $\frac{36}{100}\times\frac{5}{15}\left(=\frac{180}{1500}=0.12\right)$ oe			M1	finding 36% of anniversary cards Or 36% of the share of 5 or 36% of fraction of amount
	$\frac{"56"+"36"}{300}$ or eg $\left(\frac{"2.8"+"1.8"}{15}\right)$ or $\frac{\frac{14}{5}+\frac{9}{5}}{15}$ $"\frac{14}{75}"+"\frac{180}{1500}"$			M1	for any fraction from correct working that isn't simplified or 30.66..% or 0.3066...
		$\frac{23}{75}$		A1	cao
					Total 5 marks

12	0.4 × 2500 (1000) **or** 0.6 × 2500 (= 1500) oe		4	M1	for finding 40% or 60% of 2500
	2500 – "1000" – 300 (= 1200) oe **or** "1500" – 300 (= 1200) oe			M1	for method to find the remaining money
	"1200" ÷ (3 + 7) × 7 oe			M1	for method to find the amount of money spent on food
		840		A1	
					Total 4 marks

13	196 ÷ (9 – 5) (= 49) oe		3	M1	
	3 × "49"			M1	
		147		A1	SCB1 for an answer from 34.5 – 34.6 **or** an answer of 42
					Total 3 marks

14	28 ÷ 0.35 (= 80) oe eg (28 ÷ 7) × 20 (= 80)		5	M1	indep for calculating total number of sweets
	1 – (0.2 + 0.35) (= 0.45) oe **or** (0.2 + 0.35) × "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" ÷ 3 (= 0.15) oe **or** "0.45" × "80" (= 36) **or** "80" – "44" (= 36)			M1	(or 0.15 or 0.3 seen in table – either order)
	"80" × "0.15" **or** "80" × "0.3" (= 24) **or** "36" ÷ 3 or "36" ÷ $\frac{3}{2}$ (= 24)			M1	A correct calculation for the number of white sweets or the number of pink sweets
		12		A1	
14 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" ÷ 3 (= 0.15) 45(%) ÷ 3 (= 15(%))			M1	(or 0.15 or 0.3 seen in table – either order)
	$\frac{n}{28}=\frac{0.15}{0.35}$ **or** $\left(\frac{n}{0.15}=\right)\frac{28}{0.35}$ oe or $\frac{n}{28}=\frac{0.3}{0.35}$ **or** $\left(\frac{n}{0.3}=\right)\frac{28}{0.35}$ **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%
	$(n =)\ 28\times\frac{0.15}{0.35}$ **or** $(n =)\ 0.15\times\frac{28}{0.35}$ or 15% = 3 × 4 or $28\times\frac{0.3}{0.35}$ **or** $0.3\times\frac{28}{0.35}$ **or** 30% = 6 × 4 (= 24)			M1	a calculation using proportion that would lead to finding their n or $2n$
		12		A1	
					Total 5 marks

15	$390 \div (8-2)$ (= 65) or $\frac{8}{15}-\frac{2}{15}=390$ or $\frac{8}{15}x-\frac{2}{15}x=390$ or $\frac{6}{15}=390$ or $\frac{6}{15}x=390$ oe		3	M1	M2 for $\frac{390\times15}{6}$ oe
	"65" × (2 + 5 + 8) oe or $\frac{1}{15}=65$ or $\frac{1}{15}x=65$ or $\frac{1}{5}=195$ or $\frac{1}{5}x=195$			M1 or for 975 seen with further work and a different answer	
	Correct answer scores full marks (unless from obvious incorrect working)	975		A1	SCB1 for 52, 130, 208 or 390, 975, 1560 (or 2925) or 97.5, 243.75, 390 (or 731.25)
					Total 3 marks

16 (a)	eg 60 : 24		2	M1 for any ratio equivalent to 60 : 24 or for an answer of 2 : 5	
	Correct answer scores full marks (unless from obvious incorrect working)	5 : 2		A1	
(b)		$\frac{3}{10}$	1	B1	
(c)	eg 20 ÷ 4 (= 5) **or** 20 ÷ 4 × 11 (= 55) **or** $\frac{x}{11}=\frac{20}{4}$ **or** $\frac{x}{20}=\frac{11}{4}$		3	M1 for a correct first step	M2 for $\frac{20}{4}\times15$
	eg 11 × "5" + 20 **or** (11 + 4) × "5"			M1 for a complete method	
	Correct answer scores full marks (unless from obvious incorrect working)	75		A1	
					Total 6 marks

17	2 : 3 : 15 oe or 20 or (1 : 5) × 3 or (1 : 5 =) 3 : 15 or $2n$: $3n$: $15n$ e.g. 4 : 6 : 30 or G(reen) = 2, O(range) = 3 , Y(ellow) = 15		3	M1
	$\frac{2}{\text{"20"}}\times 280$ oe or 14 × 2 or $\frac{2}{\text{"2"+ "3"+ "15"}}\times 280$ oe or $\frac{2n}{\text{"2}n\text{"+ "3}n\text{"+ "15}n\text{"}}\times 280$ oe			M1
	Correct answer scores full marks (unless from obvious incorrect working)	28		A1 or 28 : 42 : 210 or 28 , 42 , 210 If not in this order must be labelled correctly
				Total 3 marks

18	$\frac{39}{n}$ where n = 3, 4 or 7 or "(7 – 4)" or for 13 or 9.75 or 5.57… or 4 : 7 8 : 14 12 : 21 16 : 28 20 : 35 etc to 32 : 56 or more (don't have to include all trials: ratios must be correct)		3	M1	or allow for this mark eg $\frac{39\times4}{7}(=\frac{156}{7}=22.8)$ or $\frac{39\times7}{4}(=\frac{273}{4}=68.25)$
	$\frac{39}{7-4}\times4$ oe eg $\frac{4}{3}\times39$ or for 52 : 91			M1	working with figures obtained from a correct method
	Correct answer scores full marks (unless from obvious incorrect working)	52		A1	(52 : 91 or 91 is M2 unless Alisha = 52 clearly shown in working)
					Total 3 marks

19	1700 ÷ 2 (= 850)	M2 for eg $1700 \times \frac{7}{2}$ (= 5950)		4	M1	for finding the value of one share	M2 for a complete method to find the cost of Seiso's share **or** the total of Roland and Seiso's share
	"850" × 5 (= 4250) **or** "850" × (2 + 5) (= 5950) or 1700 + "4250" (= 5950)	**or** $1700 \times \frac{5}{2}$ (= 4250)			M1	for finding the cost of Seiso's share **or** the total of Roland and Seiso's share	
	eg 1700 + "4250" + (1700 + 2150) **or** "5950" + (1700 + 2150) **or** "5950" + 3850				M1	for a complete method	
	Correct answer scores full marks (unless from obvious incorrect working)		9800		A1	SCB1 for 1700 ÷ 5 (= 340) or 1700 ÷ 7 (= 242(.85…) or 243) or 2150 ÷ 7 (= 307(.14…)) or 2150 ÷ 2 (= 1075) or 2150 ÷ 5 (= 430)	
							Total 4 marks

20	135 ÷ (2 + 7) (= 15) oe **or** 135 ÷ 9 (= 15) oe **or** 9 × 15 (= 135) oe		4	M1	M2 for $\frac{2}{9} \times 135 (= 30)$ or $\frac{7}{9} \times 135 (= 105)$
	2 × "15" (= 30) oe **or** 7 × "15" (= 105) oe			M1	
	"30" × 8 + "105" × 5 (= 765) oe **or** 240 + 525 (= 765) oe			M1	
	Correct answer scores full marks (unless from obvious incorrect working)	65		A1	
					Total 4 marks

21	$12 \div (5-2)\ (=4)$ **or** $2:5=8:20$ **or** $A=8$ **or** $S=20$ **or** $=20$ eg $\frac{5}{15}x - \frac{2}{15}x = 12$ **or** $x = 60$		3	M1	for method to find the value of one share **or** working with the ratio for Arjun or Simon **or** setting up an equation **or** for finding the total number of goals (= 60)	M2 for $\frac{8}{5-2} \times 12$ oe
	eg $8 \times$ "4" **or** $8 \times \frac{8}{2}$ **or** 8 + 12 + 12 **or** $8 \times \frac{20}{5}$ **or** 20 + 12 **or** $"60" \times \frac{8}{15}$			M1	for a complete method	
	Correct answer scores full marks (unless from obvious incorrect working)	32		A1	SCB1 for $\frac{8}{15} \times 12 (= 6.4)$	
						Total 3 marks

22	2 and 15 seen or 1×2 (+) 3×5 (= 17)	$2x + 15x$ (= 85) or $\frac{2}{3}y + 5y\,(=85)$ or $0.25t \times 2 + 0.75t \times 5$ (= 85)		4	M1	For 2 and 15 oe seen or 17 or a correct equation in one unknown for number of 2p coins (x) or number of 5p coins (y) or total number of coins (t)
	85 ÷ (2 + 15) (= 5) or at least two pairs of multiples of the values of 2 and 15 (eg 4, 30; 6, 45…..) or 10(p) (and) 75(p) or 10 : 75 or 5×2 and 15×5 $2 \times 5 + 5 \times 3 \times 5$ or 20 coins	$17x = 85$ ($x = 5$) or $\frac{17}{3}y = 85$ ($y = 15$) or $4.25t = 85$ ($t = 20$)			M1	assumes previous M1 for number of 2p coins **or** number of 5p coins **or** total number of coins **or** value of 2p coins **and** value of 5p coins may be **clearly** listed eg 2 555 2 555 2 555 2 555 2 555 with no ambiguity
	5 (2p coins) and 15 (5p coins) or 5 : 15 (if clearly identified (or used) as the key ratio eg not just part of a list) or $(3 - 1) \times 5$	eg 15 – 5 oe			M1	Correct number of 2p coins **and** 5p coins or a sum to find the difference in number of coins
	Correct answer scores full marks (unless from obvious incorrect working)		10		A1	SCB1 if no other marks awarded for 21.25 in working or on answer line
						Total 4 marks