

1	2540 shown	M1 M1 A1	for finding the cost of one item eg $2 \times 600 (=1200)$ or $7 \times 120 (=840)$ or $2 \times 250 (=500)$ full process eg $"1200" + "840" + "500" (=2540)$ or $2500 - "1200" - "840" - "500" (= \pm 40)$ for 2540 or ± 40	Ignore written statements as long as the correct figures are shown									
2	61	P1 A1 A1	for $300 \div 4.85 (= 61.8\dots)$ for 61.8... or 62 61	This mark may be awarded for build-up methods that get to figures that are before or after 300 Embedded answers get -1 mark.									
3	80	P1 P1 A1	for $1 - \frac{13}{15} \left(= \frac{2}{15} \right)$ or $\frac{13}{15} \times 600$ (million) (= 520 (million)) for $"\frac{2}{15}" \times 600$ (million) (= 80 (million)) or $600 - "520" (=80)$ oe Accept 80 000 000	Condone no million or may see 000 000 used* *In this case condone up to two missing 0s for the award of the P marks. For P marks accept $\frac{13}{15}, \frac{2}{15}$ rounded or truncated to no less than 2dp.									
4	7	P1 P1 A1	for $20 - 6 (= 14)$ or $20 \div 2 (=10)$ and $6 \div 2 (=3)$ for $"14" \div 2 (= 7)$ or $"10" - "3" (= 7)$ cao	May be seen as a build-up method or by a method of repeated subtraction, listing multiples of 2									
5	27	M1 A1	for $-15 + 42 (=27)$ oe cao	SC: B1 for answer of 26 if M0 scored									
6	£73.60 or 7360p	M1 M1 M1 A1	for $89198 - 88738 (= 460)$ OR for showing 89198×16 or 88738×16 OR for showing $(89198 + 88738) \times 16$ for showing $"460" \times 16$ OR for showing $89198 \times 16 - 88738 \times 16$ (dep on M1) for a complete method of multiplication with relative place value correct including an intention to add all the appropriate elements of the calculation eg. 2 lines of the 1st method, internal numbers of grids, or complete structure shown of partitioning methods. for £73.6(0) or 7360p SC B3 for an answer with digits 736 with incorrect or missing units	May see 0.16 used $89198 \times 16 = 1427168$ $88738 \times 16 = 1419808$ $(89198 + 88738) \times 16 = 2846976$ Accept in any units, correct figures would imply previous mark 4600 <u>2760</u> 7360 <table border="1"><tr><td></td><td>400</td><td>60</td></tr><tr><td>10</td><td>4000</td><td>600</td></tr><tr><td>6</td><td>2400</td><td>360</td></tr></table> $4000+2400+600+360$		400	60	10	4000	600	6	2400	360
	400	60											
10	4000	600											
6	2400	360											

7	(a)	(0)8 45	P1	for $50 \div 40 (= 1.25)$ oe or (time \Rightarrow) (0)8 30 (after travelling for) 40 miles	May be seen as a build-up method and may state 1 hour 15 mins SC: B2 for answer of (0)8 55 ($= 7.30 + 1.25$)
			P1	for a process to convert their time to minutes or hours and minutes, eg " $1.25 \times 60 (= 75 \text{ mins} = 1 \text{ hr } 15 \text{ mins})$ " or for " $\frac{10}{40} \times 60 (= 15 \text{ mins})$ "	
	(b)	Explanation	C1	Acceptable examples It will be earlier Time will be reduced He will get there quicker/faster He will arrive at a different time The journey will be shorter so he will arrive earlier Not acceptable examples He will arrive later The time will increase	Explanations must be unambiguous

8	45 π	P1	for (area of circle \Rightarrow) $\pi \times 3^2$	[area of circle] $\times 5 = \pi \times 3^2 \times 5$ or $\pi \times 6^2 \times 5$ or $\pi \times r^2 \times 5$
		P1	for (volume \Rightarrow) [area of circle] $\times 5$	
		A1	cao	

9	30	P1	for $160 \div (3+7) (= 16)$ or $\frac{3}{3+7} (= \frac{3}{10})$	Award no marks for a correct answer with no supportive working
		P1	for " $16 \times 3 (= 48)$ " or " $\frac{3}{10} \times 160 (= 48)$ "	
		P1	for a correct step using 48 eg " $48 \div 8 (= 6)$ " or " $48 \times 25 \div 100 (= 12)$ " or (indep) for combining $\frac{1}{8}$ and 25%, eg $\frac{1}{8} + \frac{1}{4} (= \frac{3}{8})$ or " $0.125 + 0.25 (= 0.375)$ " or " $12.5\% + 25\% (= 37.5\%)$ "	
		P1	for a complete process to find the number of petrol cars. eg " $48 - 6 = 42$ " oe or $(1 - \frac{3}{8}) \times 48$ oe or $\frac{3}{10} \times (1 - \frac{3}{8}) \times 160$ oe	
		A1	cao SC B2 for an answer of 100 if P0 scored	

10	213	P1	for beginning to work with costs eg $1428 - 150 (= 1278)$ or $1428 \div 6 (= 238)$ and $150 \div 6 (= 25)$	
		P1	for complete process to find monthly payment eg " $1278 \div 6$ or " $238 - 25$ "	
		A1	cao	

11	13.2	P1	process to convert decimal time, eg $25.3 \times 60 (= 1518)$ or $0.3 \times 60 (= 18)$ OR process to work with mean, eg [time] $\div 115 (= 0.22)$ or $1 \div (115 \div [\text{time}]) (= 0.22)$	[time] could be 25.3 or any other time that has been incorrectly changed from 25.3 hours
		P1	full process to work out mean time allocated for appointment, eg " $1518 \div 115$ or " 0.22×60 "	
		A1	cao	

12	1.19	P1	process to find number of small bags that can be filled, eg $[3\text{kg}] \div 150 (= 20)$ oe		[3kg] must be 3 and zeros only eg 300 Build up methods are allowed to imply process
		P1	for starting a process to work with percentage for cost of box, eg $17.60 \times \frac{35}{100} (= 6.16)$ or $100 + 35 (= 135)$	works with starting cost per small bag, $17.60 \div "20"$	Cost per small bag given as £0.88 will imply P1P1
		P1	for full process to work with percentage increase, eg $17.60 \times \frac{135}{100} (= 23.76)$	begins process to work with percentage for a small bag, eg $"0.88" \times \frac{35}{100} (= 0.308)$	
		P1	full process to find selling price for small bag, eg $"23.76" \div "20" (= 1.188)$	full process to find selling price for small bag, $"0.88" \times \frac{135}{100} (= 1.188)$ oe	
		A1	cao		

13	(a)	19	P1	for process to find area available at festival B, eg $700 \times 2000 (= 1\ 400\ 000)$	Accept either number rounded eg 207 or 188 Accept both numbers rounded eg 207 and 188
			P1	for finding the area available per person at one festival, eg $80\ 000 \div 425 (= 188.23...)$ or [area] $\div 6750 (= 207.40...)$	
			P1	for finding the area available per person at both festivals, eg $80\ 000 \div 425 (= 188.23...)$ and [area] $\div 6750 (= 207.40...)$	
	(b)	explanation	A1	answer in the range 18.7 to 19.5	
			C1	for a valid statement relating to scale factor for area. Acceptable examples there are 10000 (cm ²) in 1 (m ²) because 1 m ² is the same as $100 \times 100 = 10000$ cm ² there are 2 side lengths that change from 1 m to 100 cm $300 \div 3$ is 100 should use 100 ² $300 \div 100 \div 100 = 0.03$ $3 \times 100 \times 100 = 30000$ Because it's area not length. Because it's in m ² not just metres He hasn't taken the squared sign into account Not acceptable examples there are 1000 cm in 1 m Callum is correct because $300 \div 3$ is 100 $3^2 = 9$ $300 \times 300 = 90000$ You have to square the number	

14	29	P1	for a start to a process, eg. (total apples =) $86 + 75 + 92 (= 253)$ or (total oranges =) $68 + 80 + 76 (= 224)$ or differences each week, eg. (week 1) $86 - 68 (= 18)$ or (week 2) $75 - 80 (= -5)$ or (week 3) $92 - 76 (= 16)$	
		P1	for complete process, eg "253" - "224" or "18" + "-5" + "16"	
		A1	cao	

15	Yes (supported)	M1	for $48 \times 3 (= 144)$ or $35 \times 4 (= 140)$ or $48 \div 4 (= 12)$	
		M1	for $48 \times 3 (= 144)$ and $35 \times 4 (= 140)$ or $"140" \div 48 (= 2.9...)$ or $"140" \div 3 (= 46.6...)$ or $"12" \times 3 (= 36)$ or $"144" \div 4 (= 36)$ or $"144" \div 35 (= 4.1...)$	
		C1	for Yes with 144 and 140 OR 36 OR 2.9... OR 4 (spare) OR 4.1... (each frame) OR 46.6... (in each box)	

16	(a)	300	M1	for a correct method to measure and convert one line to a distance in metres, eg. $(AB =) 5 \times 150 (= 750$ or in the range 720 to 780) or $(BC =) 4 \times 150 (= 600$ or in the range 570 to 630) or $(AC =) 7 \times 150 (= 1050$ or in the range 1020 to 1080) or for $5 + 4 - 7 (=2$ or in the range 1.4 to 2.6)	Accept measurements given in mm instead of cm for the first mark. Accept measurements given to a tolerance of ± 2 mm Where "750", "600", "1050" and "2" have come from their measurements
			M1	for a complete method, eg. "750" + "600" - "1050" or "2" $\times 150$	
		A1	for answer in the range 210 to 390		
	(b)	288	B1	for answer in the range 286 to 290	

17	42	P1	for process to find number of red counters, eg. $400 \div 8 \times 3 (= 150)$ or process to convert both to percentages: 3/8 as 37.5 and 82/400 as 20.5 or process to convert both to fractions with common denominator: eg 3/8 as 75/200 and 82/400 as 41/200 oe	NB could use other decimals eg 0.375, 0.205 or % or fractions
		P1	for process to find number of green counters, eg $400 - "150" - 82 (=168)$ or process to find the percentage of red and yellow counters eg "37.5" + "20.5" (=58) or $("150" + 82) \div 400 \times 100 (=58)$	
		P1	for complete process to find the percentage of counters that are green, eg $"168" \div 400 \times 100$ or $100 - (37.5 + 20.5)$ or $100 - "58"$	
		A1	cao	

18	1.5	P1	for process to develop 3 algebraic expressions, eg. $(R =) n, (S =) 2n, (T =) 2n - 6$, oe, at least two must be correct. or for selecting 3 values satisfying the given criteria, eg. $(R =) 10, (S =) 20, (T =) 14$	Accept 1 : 1.5 etc as answer
		P1	for process to sum 3 algebraic expressions and equating to 54, eg. $n + "2n" + "2n - 6" = 54$ or for finding the correct sum of their values eg. "10" + "20" + "14" = 44	
		P1	for start of process to solve the correct linear equation, eg. $5n = 54 + 6 (n = 12)$ or for 12, 24, 18	
		P1	for "12" : $2 \times "12" - 6$ oe eg 12 : 18 oe or 18 : 12 linked to T, R	
		A1	for 1.5 or $\frac{3}{2}$ or $1\frac{1}{2}$	

19	10	P1	for a process to use distance = speed \times time for either of the parts of Jessica's journey, eg. $6 \times \frac{15}{60} (= 1.5)$ or $9 \times \frac{40}{60} (= 6)$ or $6 \times 15 (= 90)$ or $9 \times 40 (= 360)$	Must be consistent units at this stage.
		P1	for a process to add the 2 distances for Jessica, eg $6 \times \frac{15}{60} + 9 \times \frac{40}{60} (= 7.5)$ or $6 \times 15 + 9 \times 40 (= 450)$	
		P1	for complete process to find Amy's average speed, eg. "7.5" \div "0.75" oe or "450" \div 45	
		A1	cao	

20	16 000	M1	for $13600 \div 0.85 (= 16000)$ oe	
		A1	cao	