Mark Scheme

Q1.

Paper 1MA1: 3F			
Question	**Working**	**Answer**	**Notes**
(a)	$\frac{388-320}{320}\times 100 =$	21.25	M1 For a complete method A1 21.25%
(b)	A 388 (million) ÷ 3200 = £0.12125 million (£121 250) B 57(million) ÷ 640 = £0.0890625 million (£89062.50)	Company A + evidence	M1 Method to find sales/person for A or B for 2014 A1 £121 250 or £89062.50 C1 Company A with £121 250 and £89062.50

(**Q23 1MA1/3F/N, Specimen papers**)

Q2.

Question	Working	Answer	Mark	Notes
		207.50	M1	for a first step to solve the problem, e.g. 42.5 ÷17
			M1	for a complete method
			A1	cao

(**Q23 1MA1/3F/M2, Specimen papers**)

Q3.

Question	Working	Answer	Mark	Notes
		70	M1	for method to find 3.5% of 400 , e.g. 0.035 × 400 (= 14)
			M1	(dep M1) for "14" × 5 (= 70)
			A1	cao
				SCB2 for 470 or 330 if no other marks awarded

(**Q14 1MA1/3F/M2, Specimen papers**)

Q4.

Question	Working	Answer	Mark	Notes
		40	B1	cao

(**Q01 1MA1/2F/M3, Specimen papers**)

Q5.

Question		Working	Answer	Mark	Notes
			No with comparison of correct values	3	P1 starts process of comparison, e.g. writes two appropriate fractions or finds a percentage or works out a multiplier P1 complete process to give values that can be used for comparison A1 No and comparison of correct comparable values (e.g. 80% and 76.7...% **OR** 44.8 (people) accept Yes with a suitable argument

(**Q13 1MA1/3F/M1, Specimen papers**)

Q6.

Question	Working	Answer	Notes
		80	B1

(**Q02 1MA1/1F/S2, Specimen papers**)

Q7.

Question	Working	Answer	Notes
		60	B1 cao

(**Q05 1MA1/3F/S2, Specimen papers**)

Q8.

Paper 1MA1: 1F			
Question	Working	Answer	Notes
		90	B1 cao

(**Q04 1MA1/1F/S1, Specimen papers**)

Q9.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	11533	P1	for working with 68%, eg 800 × 0.68 (= 544 people) oe or "16960" × 0.68 oe	Percentage calculation could be done at any stage
		P1	for a correct process, other than that of finding a %, eg "544" × 2 (= 1088) or 10.6 × 2 (= 21.2) or 800 × 2 (= 1600) or "544" × 10.6 (= 5766.4) or 800 × 10.6 (= 8480)	
		P1	for full process to find amount of coffee required eg "1088" × 10.6 or "544" × "21.2" or "5766.4" × 2 (= 11532.8) or for an answer of 11532	
		A1	for answer in the range 11532.5 to 11533	An answer within the range shown in working but incorrectly rounded gets full marks.
(b)	Statement	C1	for a correct statement **Acceptable examples**	If figures are given as part of
			the amount will be more he will need more coffee it is an underestimate my answer in part (a) means there would not be enough for everyone he will need 12211(.2) needs 678(.4) more **Not acceptable examples** amount will decrease amount of coffee will change	the answer they must be correct, but can allow ft.

(**Q02 1MA1/3H, June 2023**)

Q10.

Question	Working	Answer	Notes
		32	B1

(**Q01 1MA1/1F/S2, Specimen papers**)

Q11.

Question	Working	Answer	Mark	Notes
		1545	M1	shows a method to find 3% eg 1500 × 0.03 (=45)
			A1	cao

(**Q20 1MA1/1F, June 2017**)

Q12.

Question	Answer	Mark	Mark scheme	Additional guidance
	No (supported)	P1	For a process to calculate the initial or new pressure, eg (70 +10) ÷ (20+10) (=2.6 to 2.7) **or** 80 ÷ 30 (=2.6 to 2.7) **or** 70 ÷ 20 (=3.5)	Accept any value in the range 2.6 to 2.7 if unsupported by working
		P1	For a complete process to make a comparison eg. 0.8 × "3.5" (=2.8) **OR** $\frac{("3.5"-"2.6")}{"3.5"}$ ×100 (=22 to 26) **OR** "3.5" × 0.2 (=0.7) **and** 80 ÷ 30 (=2.6 to 2.7) **OR** $\frac{"2.6"}{"3.5"}$ (× 100) (=0.74 to 0.78 **or** 74 to 78)	
		A1	for a correct conclusion supported by accurate figures eg 2.8 **and** 2.6(6…) **OR** decrease is 24% (or 22% to 26%) **OR** 0.7 **and** 2.6 to 2.7 **and** 3.5 **OR** 0.7 **and** 0.9 **OR** 0.76 (or 0.74 to 0.78) **OR** 76% (or 74% to 78%)	Allow truncation or rounding of figures

(Q06 1MA1/2H, June 2018)

Q13.

Question	Answer	Mark	Mark scheme	Additional guidance
	No (supported)	P1	For a process to calculate the initial or new pressure, eg (70 +10) ÷ (20+10) (=2.6 to 2.7) **or** 80 ÷ 30 (=2.6 to 2.7) **or** 70 ÷ 20 (=3.5)	Accept any value in the range 2.6 to 2.7 if unsupported by working
		P1	For a complete process to make a comparison eg. 0.8 × "3.5" (=2.8) **OR** $\frac{("3.5"-"2.6")}{"3.5"}$ ×100 (=22 to 26) **OR** "3.5" × 0.2 (=0.7) **and** 80 ÷ 30 (=2.6 to 2.7) **OR** $\frac{"2.6"}{"3.5"}$ (× 100) (=0.74 to 0.78 **or** 74 to 78)	
		A1	for a correct conclusion supported by accurate figures eg 2.8 **and** 2.6(6…) **OR** decrease is 24% (or 22% to 26%) **OR** 0.7 **and** 2.6 to 2.7 **and** 3.5 **OR** 0.7 **and** 0.9 **OR** 0.76 (or 0.74 to 0.78) **OR** 76% (or 74% to 78%)	Allow truncation or rounding of figures

(Q25 1MA1/2F, June 2018)

Q14.

Question	Working	Answer	Mark	Notes
		45	M1	for a correct first step eg $\frac{9}{7+4+9}$ (=$\frac{9}{20}$) **or** $\frac{100}{7+4+9}$ (=5) **or** a full method for one of the other colours
			A1	cao

(Q15 1MA1/1F, Nov 2017)

Q15.

Question	Working	Answer	Notes
		35	M1 for method to find increase 108 – 80 (= 28) M1 for method to find % increase eg $\frac{28}{80} \times 100$ A1 cao

(Q17 1MA1/1F/S2, Specimen papers)

Q16.

Question	Working	Answer	Mark	Notes
		42	M1	for showing method to work out 60% of 70, eg 0.6 × 70 **or** (70 ÷ 10) × 6 (= 42)
			A1	cao

(Q05 1MA1/1F, June 2017)

Q17.

Question	Working	Answer	Mark	Notes
	£6 − £5.64 = 36p or 50p – 47p = 3p	6.4	P1	for a strategy to compare the same number of bottles e.g. £5.64 ÷ 12 (= 47 or 0.47) or 12 × 50p (= 6 or 600) or 36 or 0.36 or 3 or 0.03
			P1	for start of process to find percentage profit e.g. $\frac{"36"}{564}$ or $\frac{"3"}{"47"}$ or $\frac{"6"}{5.64}$ or $\frac{50}{"47"}$ oe with consistent units
	6.3829787 …%		A1	for answer in the range 6.3 to 6.4

(Q17 1MA1/2F, Nov 2017)

Q18.

Question	Working	Answer	Mark	Notes
	£6 − £5.64 = 36p or 50p − 47p = 3p	6.4	P1	for a strategy to compare the same number of bottles e.g. £5.64 ÷ 12 (= 47 or 0.47) or 12 × 50p (= 6 or 600) or 36 or 0.36 or 3 or 0.03
			P1	for start of process to find percentage profit e.g. $\frac{"36"}{564}$ or $\frac{"3"}{"47"}$ or $\frac{"6"}{5.64}$ or $\frac{50}{"47"}$ oe with consistent units
	6.3829787…%		A1	for answer in the range 6.3 to 6.4

(**Q02 1MA1/2H, Nov 2017**)

Q19.

Question		Working	Answer	Mark	Notes
			20	3	M1 for 52 − 41.6 (= 10.4) M1 "10.4" ÷ 52 × 100 A1 for 20

(**Q12 1MA1/1H/M1, Specimen papers**)

Q20.

Question		Working	Answer	Mark	Notes
			459	3	M1 $\frac{32}{100} \times 675$ (= 216) oe or 100 − 32(= 68) M1 675 − "216" or 0.68 × 675 A1 cao

(**Q19 1MA1/2F/M1, Specimen papers**)

Q21.

Question	Answer	Mark	Mark scheme	Additional guidance
	No	P1	for 3000 ÷ (2 + 3) (= 600)	
	(supported)	P1	for "600" × 2 (= 1200) **or** "600" × 3 (= 1800) **or** "600" ÷ 6 (= 100) **or** "600" ÷ 20 (= 30)	
		P1	for "1200" ÷ 6 (= 200) **or** "1800" ÷ 20 (= 90) **or** "100" × 2 (= 200) **or** "30" × 3 (= 90)	
		P1	for "90" ÷ ("200" + "90") × 100 (= 31.0...) oe **or** "90" ÷ ("200" + "90") (= 0.31...) **or** 0.3 × ("200" + "90") (= 87)oe	Full method to compare
		C1	correct conclusion **and** fully correct calculations with accurate figure eg No and 87 **or** No and 31% **or** No and 0.31	No working, answer only no marks No may be implied by a statement

(**Q03 1MA1/2H, Nov 2020**)

Q22.

Question	Answer	Mark	Mark scheme	Additional guidance
	58	P1	for a correct process to find the pass mark for the exam or either paper eg $(60 + 90) \div 3 \times 2$ oe (= 100) **or** $60 \div 3 \times 2$ oe (= 40) **or** $90 \div 3 \times 2$ oe	It is possible to award P0P1 on this question Accept 66% or better used for $\frac{2}{3}$
		P1	for a process to find 70% of 60 eg $\frac{70}{100} \times 60$ oe (= 42)	May be seen in parts
		P1	for a complete set of processes to find the required mark "100" – "42" (=58) or "40" + "60" – "42" (=58)	
		A1	cao SC B2 for an answer of 48	

(**Q16 1MA1/2F, Nov 2020**)

Q23.

Question	Answer	Mark	Mark scheme	Additional guidance
	118	P1	for a correct first step, eg $200 \times 2 \div 5$ (= 80) **or** $200 \times 3 \div 5$ (= 120) **or** $1 - \frac{2}{5} \left(= \frac{3}{5} \right)$ oe eg 100 – 40 (= 60(%))	
		P1	for a process to find the number of child vegetarians or number of child non-vegetarians, eg "80" × 0.35 (= 28) **or** "80" × (1 – 0.35) (= 52)	
		P1	for a process to find the number of adult vegetarians or number of adult non-vegetarians, eg (200 – "80") × 0.45 (= 54) **or** (200 – "80") × (1 – 0.45) (= 66)	
		P1	for a complete process to find the total number of non-vegetarians, eg 200 – "28" – "54" **or** ("80" – "28") + (200 – "80" – "54") oe eg "52" + ("120" – "54") **or** "80" × (1 – 0.35) + (200 – "80") × (1 – 0.45)	
		A1	cao	Answer of $\frac{118}{200}$ is P4A0

(**Q09 1MA1/3F, Nov 2024**)

Q24.

Question	Answer	Mark	Mark scheme	Additional guidance
	42	P1	for process to find number of red counters, eg. 400 ÷ 8 × 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) ÷ 400 × 100 (=58)	
		P1	for complete process to find the percentage of counters that are green, eg "168" ÷ 400 × 100 or 100 – (37.5 + 20.5) or 100 – "58"	
		A1	cao	

(**Q19 1MA1/3F, June 2022**)

Q25.

Question	Answer	Mark	Mark scheme	Additional guidance
	612	P1	Alan: for 100 – 32 – 40 (= 28) or for finding "28"% of 400 eg 400 × 0.28 (=112)	
		P1	Beryl: for $1-\frac{3}{10}-\frac{1}{10}\left(=\frac{6}{10}=60\%\right)$ or for finding $"\frac{6}{10}" \times 500$ (=300)	
		P1	Charlie: for starting to use the ratio 3 : 4 eg 150 ÷ 3 (=50)	
		P1	for complete ratio process eg $"\frac{150}{3}" \times 4$ (=200)	
		A1	cao	Answers only (without working) award 0 marks.

(**Q23 1MA1/3F, June 2019**)

Q26.

Question	Answer	Mark	Mark scheme	Additional guidance
	30	P1	for $160 \div (3+7)$ (= 16) **or** $\frac{3}{3+7}(=\frac{3}{10})$	
		P1	for "16" × 3 (= 48) **or** "$\frac{3}{10}$" × 160 (= 48)	
		P1	for a correct step using 48 eg "48" ÷ 8 (= 6) **or** "48" × 25 ÷ 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" – "12" oe **or** (1 – "$\frac{3}{8}$") × "48" oe **or** $\frac{3}{10}$ × (1 – "$\frac{3}{8}$") × 160 oe	
		A1	cao SC B2 for an answer of 100 if P0 scored	Award no marks for a correct answer with no supportive working

(**Q25 1MA1/1F, June 2022**)

Q27.

Question	Answer	Mark	Mark scheme	Additional guidance
	Yes, supported by correct figures	P1	for a process to find the number of sweets Tina gives to Andy, eg $14 \div 7 \times 3 (=6)$ **or** for a process to work with fractions of the total to find fraction given to Andy, eg $\frac{14}{21}\times\frac{3}{7}\left(=\frac{2}{7}\right)$ **or** for dividing a given number (eg 441) in the ratio 1 : 6 : 14 (= 21 : 126 : 294)	May work with an equivalent ratio, eg 21 : 126 : 294 and do $294 \div 7 \times 3 (=126)$ as a first step May work in multiples of x for all marks
		P1	for a process to find number for Andy and Tina after first exchange, eg A = 1 + "6" (=7) **and** T = 14 – "6" (=8) **or** for a process to find the number of sweets Tina gives to Luke eg ("14" – "6") × $\frac{12.5}{100}$ (= 1) **or** for a process to work with fractions of the total to find fraction given to Luke, eg for $\frac{(14-"6")}{21}\times\frac{12.5}{100}$ **or** process to work out the number of sweets given to Andy **and** Luke for their total, eg "294" ÷ 7 × 3 (= 126) **and** ("294" – "126") × $\frac{12.5}{100}$ (= 21)	
		P1	for a process to find the final amounts or final shares for at least **two** of Andy, Luke and Tina eg two of 1 + "6" (= 7) , 6 + "1" (= 7) , 14 – "6" – "1" (= 7) **or** $\frac{1}{21}+\frac{"2"}{7}\left(=\frac{7}{21}\right)$, $\frac{6}{21}+"\frac{1}{21}"\left(=\frac{7}{21}\right)$, $\frac{14}{21}-"\frac{2}{7}"-"\frac{1}{21}"\left(=\frac{7}{21}\right)$ **or** "21" + "126" (= 147) , "126" + "21" (= 147) , "294" – "126" – "21" (= 147)	
		C1	Yes, supported by full working and accurate figures for Andy, Luke and Tina	Accurate figures with no supportive working scores 0

(**Q25 1MA1/2F, June 2024**)

Q28.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	45 150 105 90 65 25	B3 (B2 (B1	for a fully correct frequency tree for at least 4 figures correctly placed) for at least 1 figure correctly placed)	If probabilities used instead of frequencies award a maximum of B2
(b)	30	M1 A1	for eg $\frac{45}{150}$ oe or $45 \div 150$ (= 0.3) **or** for $\frac{\text{[number of car owners who own a bicycle]}}{\text{[total number of people who own a car]}}$ ft diagram oe for 30 **or** ft diagram	Must be values from their diagram with numerator < denominator

(**Q19 1MA1/2F, June 2023**)

Q29.

Question	Working	Answer	Mark	Notes
		219.60	M1	180×1.22 oe
			A1	accept 219.6

(**Q16 1MA1/2F/M2, Specimen papers**)

Q30.

Question	Working	Answer	Mark	Notes
(a)		Explanation	C1	eg States over-estimated for both values
(b)		182.7(0)	P1	for a process to find 10% of a value stated in the question eg $\frac{10}{100} \times 5.80$ (=0.58) **or** $\frac{10}{100} \times 35$ (=3.5) oe **or** 35×5.80 (=203), allow 30×5.80 (=174) **or** $35 \times$ [reduced price]
			P1	for a process to find 90% of a value stated in the question eg $35 -$ "3.5" (=31.5) **or** 0.9×5.80 (=5.22) oe **or** $\frac{10}{100} \times$ "203" (=20.3) **or** $\frac{10}{100} \times$ "174" (=17.4) oe
			P1	for a complete process to find actual cost of 35 eg $0.9 \times 5.80 \times 35$ oe
			A1	cao SC B2 156.6(0)

(**Q16 1MA1/1F, Nov 2017**)

Q31.

Paper 1MA1: 1H			
Question	Working	Answer	Notes
		No with reason	C1 Starts to formulate reason eg. No with partial explanation or 0.8×0.7 or starts to use figures C1 No with full explanation eg. $0.8 \times 0.7 = 0.56$ so only 44% reduction

(**Q15 1MA1/1H/N, Specimen papers**)

Q32.

Question	Answer	Mark	Mark scheme	Additional guidance
	1204	P2 (P1 P1 A1	for a full process to find 120% of 14200 eg. 1.2×14200 (=17040) **or** $(0.2 \times 14200) + 14200$ (=17040) for process to find 20% of 14200 eg. 0.2×14200 (=2840) oe) for [cost] − 5000 cao SCB1 for answer of 920 if P0 scored	 [cost] must be greater than 14200

(**Q18 1MA1/3F, Nov 2018**)

Q33.

Question	Answer	Mark	Mark scheme	Additional guidance
	260 to 260.5	M1 M1 A1	for 883 – 245 (=638) **or** 883 ÷ 245 (=3.60..) **or** 883 ÷ 245 × 100 (=360(.408...)) oe for a complete method to find the percentage increase eg "638" ÷ 245 × 100 (=260(.408..)) **or** 883 ÷ 245 × 100 − 100 (=260(.408..)) oe Accept answers in the range 260 to 260.5	

(**Q02 1MA1/3H, Nov 2018**)

Q34.

Question	Answer	Mark	Mark scheme	Additional guidance
	1.8	P1	process to find the amount of interest before tax eg $28.80 \div 20 \times 100$ (= 144) OR for equation which would lead to (x =) 0.018, 1.8 or 1.018 eg $0.2 \times 8000 \times x = 28.8$ or $\frac{8000(100+x)}{100} = 8144$	
		P1	process to find the interest rate eg $\frac{"144"}{8000}$ (= 0.018) or $\frac{"8144"}{8000}$ (= 1.018)	These numerical expressions may be seen multiplied by 100, eg $\frac{144}{8000} \times 100$
		A1	cao	

(**Q10 1MA1/3H, June 2019**)

Q35.

Question	Answer	Mark	Mark scheme	Additional guidance
	20	P1	for process to find SP of 24 chocolate bars, eg. 0.50×24 (= 12) oe **or** for process to find the overall profit eg $(24 \times 0.5) - 10$ (= 2) **or** for process to find CP of one chocolate bar, eg. $1000 \div 24$ (= 41.66…) oe	Working can be carried out in either pounds or pence.
		P1	(dep) for start to a process to find percentage profit, eg. using $\frac{"12"-10}{10}$ **or** $\frac{"12"}{10}$ **or** $\frac{50-"41.66..."}{"41.66..."}$ oe with consistent units	
		A1	cao	

(**Q05 1MA1/1H, Nov 2020**)

Q36.

Question	Answer	Mark	Mark scheme	Additional guidance
	2.5	P1	for $450 \div 6$ (= 75) **or** statement $450 = \frac{3000 \times 6 \times y}{100}$ oe **or** $\frac{450}{3000}$ (= 0.15) or $\frac{450 \times 100}{3000}$ (= 15)	
		P1	for "75" ÷ 3000 (= 0.025) **or** (y =) $\frac{450 \times 100}{3000 \times 6}$ oe **or** $\frac{"0.15"}{6}$ (= 0.025) or $\frac{"15"}{6}$ **or** $\frac{3000+"75"}{3000}$ (= 1.025)	
		A1	cao	

(**Q19 1MA1/3F, June 2023**)

Q37.

Question	Working	Answer	Mark	Notes
		Explanation (supported)	C1 C1	for scale factors of 0.5 for decrease and 1.5 for increase seen; this could be shown in an example, e.g. £10 reduced by £5 then £5 increased by £2.50 for justifying the statement, e.g. 0.5 × 1.5 = 0.75 or £5 + £2.50 = £7.50

(**Q22 1MA1/1F/M3, Specimen papers**)

Q38.

Question	Answer	Mark	Mark scheme	Additional guidance
	35	P1 P1 P1 A1	for process to work out income and outgoings, eg 7.5(0) × 54 (= 405) **and** 100 + 120 + 80 (= 300) for process to find the profit, eg "405" – "300" (= 105) **OR** "405" ÷ "300" (= 1.35) **or** "405" ÷ "300" × 100 (= 135) for a full process to find percentage profit, eg ("105" ÷ "300") ×100 **or** ("1.35" – 1) × 100 **or** "135" – 100 cao	

(**Q02 1MA1/2H, Nov 2023**)

Q39.

Question	Answer	Mark	Mark scheme	Additional guidance
	12.5	M1 M1 A1	for 135 – 120 (= 15) **or** $\frac{135}{120}$ (= 1.125) **or** $\frac{135}{120} \times 100$ (= 112.5) for "15" ÷ 120 × 100 **or** "112.5" – 100 **or** ("1.125" – 1) × 100 cao	

(**Q08 1MA1/2H, Nov 2022**)

Q40.

Question	Answer	Mark	Mark scheme	Additional guidance
	17500	P1	for a process to find the value at the end of year 1, eg 10914.75 ÷ 0.81 (= 13475) **or** 10914.75 ÷ 0.77 (= 14175) **or** for finding the combined multiplier, eg 0.77 × 0.81 (= 0.6237)	
		P1	for a complete process to find the initial value, eg "13475" ÷ 0.77 **or** "14175" ÷ 0.81 **or** 10914.75 ÷ "0.6237"	
		A1	cao	

(**Q10 1MA1/2H, Nov 2022**)

Q41.

Question	Answer	Mark	Mark scheme	Additional guidance
	45.6	P1	for a process to start to work with the ratio, eg 240 ÷ (3 + 5) (= 30) **or** pens = $3n$ and pencils = $5n$ where n is a positive integer	Can work in £ or pence but must be consistent, 90 or 150 imply P1 This mark can be awarded at any stage
		P1	for a complete process to find the number of pens and pencils, eg "30" × 3 (= 90) **and** "30" × 5 (= 150) **OR** for process to find one cost or amount to sell for one item eg [pens] × 9 (= 810) **or** [pens] × 11 (= 990) **or** [pencils] × 6 (= 900) **or** [pencils] × 10 (= 1500) **OR** for process to find the profit for one pen or one pencil eg 11 – 9 (= 2) or 10 – 6 (= 4)	[pens] could be "30" × 3 or their number of pens [pencils] could be "30" × 5 or their number of pencils [pens] , [pencils] ≠ 1
		P1	for a process to find the total cost to buy or the total amount to sell for both, eg [pens] × 9 + [pencils] × 6 (= 1710) **or** [pens] × 11 + [pencils] × 10 (= 2490) **OR** process to find the profit for one item eg [pens] × 11 – [pens] × 9 (= 180) or [pens] × (11 – 9) (= 180) **or** [pencils] × 10 – [pencils] × 6 (= 600) or [pencils] × (10 – 6) (= 600)	180 or 600 or 780 implies P3 [pens] could be "30" × 3 or their number of pens [pencils] could be "30" × 5 or their number of pencils [pens] , [pencils] ≠ 1
		P1	for a complete process to find the profit as a percentage or a decimal, eg $\frac{[2490]-[1710]}{[1710]}\times 100$ **or** $\frac{[2490]-[1710]}{[1710]}$ (= 0.456...) **or** for a process to find the amount to sell as a percentage of the cost eg $\frac{[2490]}{[1710]}\times 100$ (= 145.6...)	[2490] is their amount to sell for both pens and pencils [1710] is their cost of pens and pencils [2490] – [1710] may be [180] + [600]
		A1	answer in the range 45.6 to 45.62	If an answer is given in the range in working and then rounded incorrectly award full marks. A correct answer with no supportive working gets 0 marks

(**Q21 1MA1/3F, Nov 2024**)

Q42.

Question	Working	Answer	Mark	Notes
		Shown, from correct figures	M1	for method to find % increase or % decrease, e.g. $\frac{120-80}{80} \times 100$ (= 50) or $\frac{200-120}{200} \times 100$ (= 40)
			M1	for complete method, e.g. $\frac{120-80}{80} \times 100$ and $\frac{200-120}{200} \times 100$
			C1	for 50% and 40%/less than 50% leading to correct conclusion

(**Q17 1MA1/2F/M3, Specimen papers**)

Q43.

Question	Answer	Mark	Mark scheme	Additional guidance
	Jan's store (supported)	P1	process to reduce £5 by 20% (= £4) **or** increase 400 by 30% (= 520)	May work in pence throughout Accept any correct appropriate percentage process
		P1	process to reduce £5 by 20% (= £4) **and** increase 400 by 30% (= 520)	
		P1	(dep P2) process to find comparable values, eg 400 ÷ "4" **and** "520" ÷ 5	May use £/g or any other comparable values
		C1	'Jan's store' fully supported by correct comparative values, eg 100 (g/£) and 104 (g/£)	Do not award without correct comparable values and full working.

(**Q18 1MA1/1F, Nov 2018**)

Q44.

Question	Answer	Mark	Mark scheme	Additional guidance
	No (supported)	P1	for start to process, eg 2100 × $\frac{40}{100}$ (= 840) or 100 – 40 (= 60)	May compare bonus shares of a single salesman or total bonus share for all 7 salesmen.
		P1	for process to find the 7 salesmen's share of bonus, eg 2100 – "840" (= 1260) **or** 2100 × $\frac{"60"}{100}$ (= 1260)	
		P1	for process to find bonus amount each salesman gets eg "1260" ÷ 7 (= 180) **OR** process to find the total bonus for all salesmen if shared equally, eg $\frac{2100}{10}$ × 7 (= 1470)	
		P1	for process to compare what a single salesman gets under each scheme, eg "180" × $\frac{25}{100}$ (= 45) and "$\frac{2100}{10}$" – "180" (= 30) **or** "180" × $\frac{25}{100}$ (= 45) and "180" + "45" (= 225) oe and $\frac{2100}{10}$ (= 210) **or** ($\frac{2100}{10}$ – "180") ÷ "180" × 100 (= 16.6...) **OR** process to compare what all salesmen gets under each scheme, eg "1260" × $\frac{25}{100}$ (= 315) and "1470" – "1260" (= 210) **or** "1260" × $\frac{25}{100}$ (= 315) and "1260" + "315" (= 1575) oe and "1470" **or** ("1470" – "1260") ÷ "1260" × 100 (= 16.6...)	
		A1	'No' supported by correct figures, eg 45 and 30, 225 and 210, 315 and 210 **or** 1575 and 1470 **or** 16.(6...)(% and 25%)	Do not award unless correct figures have been shown to support a statement made that the salesman was not correct.

(**Q22 1MA1/1F, Nov 2018**)

Q45.

Question	Answer	Mark	Mark scheme	Additional guidance
	4	M1	for $\frac{30}{100}$ × 80 (=24) oe or for 104	
		M1	(dep) for 28 – "24" or 108 – 104	Numbers in subtraction may be reversed
		A1	for 4 or –4	

(**Q11 1MA1/2F, Nov 2018**)

Q46.

Question	Answer	Mark	Mark scheme	Additional guidance
	No (supported)	P1	for start to process, eg. 2100 × $\frac{40}{100}$ (= 840) **or** 100 – 40 (= 60)	May compare bonus shares of a single salesman or total bonus share for all 7 salesmen.
		P1	for process to find the 7 salesmen's share of bonus, eg 2100 – "840" (= 1260) **or** 2100 × $\frac{"60"}{100}$ (= 1260)	
		P1	for process to find bonus amount each salesman gets eg "1260" ÷ 7 (= 180) **OR** process to find the total bonus for all salesmen if shared equally, eg $\frac{2100}{10}$ × 7 (= 1470)	
		P1	for process to compare what a single salesman gets under each scheme, eg "180" × $\frac{25}{100}$ (= 45) and "$\frac{2100}{10}$" – "180" (= 30) **or** "180" × $\frac{25}{100}$ (= 45) and "180" + "45" (= 225) oe and $\frac{2100}{10}$ (= 210) **or** ("$\frac{2100}{10}$" – "180") ÷ "180" × 100 (= 16.6...) **OR** process to compare what all salesmen gets under each scheme, eg "1260" × $\frac{25}{100}$ (= 315) and "1470" – "1260" (= 210) **or** "1260" × $\frac{25}{100}$ (= 315) and "1260" + "315" (= 1575) oe and "1470" **or** ("1470" – "1260") ÷ "1260" × 100 (= 16.6...)	
		A1	'No' supported by correct figures, eg 45 and 30, 225 and 210, 315 and 210 **or** 1575 and 1470 **or** 16.(6...)(% and 25%)	Do not award unless correct figures have been shown to support a statement made that the salesman was not correct.

(**Q03 1MA1/1H, Nov 2018**)

Q47.

Question	Answer	Mark	Mark scheme	Additional guidance
	40	P1	for 100 – 30 (=70) **or** 1 – 0.3 (=0.7) **or** 1 – $\frac{3}{10}$ (= $\frac{7}{10}$) **or** 28 ÷ 7 × 3 (=12)	
		P1	for a complete process eg 28 ÷ ("70" ÷ 10) × 10 oe **or** 28 ÷ "12"	
		A1	cao	

(**Q11 1MA1/3F, Nov 2018**)

Q48.

Question	Answer	Mark	Mark scheme	Additional guidance
	16	M1	for a complete method to find 20% of 80 eg 80 × 0.2 oe	
		A1	cao SC B1 for an answer of 64 or 96	

(**Q06 1MA1/3F, June 2019**)

Q49.

Question	Answer	Mark	Mark scheme	Additional guidance
	243	M1	for 1.8 ÷ 100 × 4500 oe (= 81) **or** for a complete method eg 4500 ×1.8 × 3 ÷ 100 oe **or** for 4743 **or** 4257	Award M1 for 4500×1.018^n
		A1	cao	

(**Q16 1MA1/2F, Nov 2019**)

Q50.

Question	Answer	Mark	Mark scheme	Additional guidance
	72	P1	for a correct process to find the number of boys or girls, eg boys = 0.55 × 800 (=440) **or** girls = 0.45 × 800 (=360) **or** process to find proportion that are boys having packed lunch, eg 0.55 × 0.4 (=0.22)	
		P1	for a correct process to find the total number of school dinners or packed lunches, eg SD = 800 × 0.69 (=552) **or** PL = 800 × 0.31 (=248) **or** process to find proportion that are girls having packed lunch, eg 0.31 – "0.22" (=0.09) **or** process to find the number of boys having school dinner, eg "440" × 0.6 (= 264) **or** number of boys having packed lunch, eg "440" × 0.4 (=176)	
		P1	for a correct process to find the number of girls having packed lunches, eg "800" × "0.31" – (440 × 0.4) **or** "0.45" × "800" – ("800" × "0.69" – "440" × 0.6) **or** "0.09" × 800	
		A1	cao	

	PL	SD	Total
Boys	176	264	440
Girls	72	288	360
Total	248	552	800

(**Q15 1MA1/3F, Nov 2019**)

Q51.

Question	Answer	Mark	Mark scheme	Additional guidance
	8	M1	for 158220 – 146500 (=11720) **or** 158220 ÷ 146500 (=1.08)	0.08 as an answer implies M1
		M1	for complete method, eg (158220 – 146500) ÷ 146500×100 oe **or** 1.08×100 – 100	
		A1	cao	

(**Q21 1MA1/3F, Nov 2019**)

Q52.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	140	M1	for complete method eg 56 ÷ 40 × 100	May be seen in different ways, eg 2.5 × 56
		A1	cao	
(b)	32	M1	for method to find percentage, eg $\frac{18}{56}\times 100$ (=32.14…)	
		A1	for an answer in the range 32 to 32.2	

(**Q19 1MA1/3F, Nov 2020**)

Q53.

Question	Answer	Mark	Mark scheme	Additional guidance
	30	M1	for 80 – 56 (= 24) **or** for $\frac{56}{80}\times 100$ (=70) **or** (loss of) 10% = 80 ÷ 10 (= 8)	
		M1	for a complete method, eg "24" ÷ 80 × 100 **or** 100 – "70" **or** (80 – 56) ÷ "8" × 10	
		A1	cao	

(**Q19 1MA1/1F, Nov 2021**)

Q54.

Question	Answer	Mark	Mark scheme	Additional guidance
	Rahim (supported)	P1	for start to the process to find 20% for Tamara, eg 220000 × 0.2 oe (= 44000) **or** 30% for Rahim, eg 160000 × 0.3 oe (= 48000) **OR** for 1 – 0.2 (= 0.8) **or** 100 – 20 (= 80) **or** 1 + 0.3 (= 1.3) **or** 100 + 30 (= 130)	Build up processes are acceptable but must be complete and correct
		P1	for a complete process to find at least one new value, eg 220000 – "44000" (= 176 000) **or** 160000 + "48000" (= 208000) **OR** 220000 × "0.8" (=176000) **or** 160000 × "1.3" (=208000)	
		A1	for one correct value, 176 000 or 208 000	
		C1	for correct conclusion supported by correct figures eg Rahim, 176 000 and 208 000	Award 0 marks for a correct answer with no supportive working.

(**Q04 1MA1/1H, Nov 2021**)

Q55.

Question	Answer	Mark	Mark scheme	Additional guidance
	320 000	M1	for a complete method eg $272\,000 \div (\frac{100-15}{100})$	
		A1	cao	

(**Q28 1MA1/2F, Nov 2021**)

Q56.

Question	Answer	Mark	Mark scheme	Additional guidance
	288	M1	for a method to find 20% eg 240 × 20 ÷ 100 (= 48) **or** shows a multiplier of 1.2 oe **or** 120%	
		M1	for a complete method eg 240 + "48" **or** 240 × 1.2 oe **or** 240 × 120 ÷ 100	
		A1	cao	

(**Q19 1MA1/1F, June 2022**)

Q57.

Question	Answer	Mark	Mark scheme	Additional guidance
	40	B1	cao	

(**Q05 1MA1/2F, June 2022**)

Q58.

Question	Answer	Mark	Mark scheme	Additional guidance
	16 000	M1	for 13600 ÷ 0.85 (= 16000) oe	
		A1	cao	

(**Q30 1MA1/3F, June 2022**)

Q59.

Question	Answer	Mark	Mark scheme	Additional guidance
	24000	P1	for use of either 0.9 or 0.875 or for 18900 (after 2 years)	
		P1	for using $0.9^2 \times 0.875$ (= 0.70875) oe or for 21000 (after 1 year)	
		A1	cao	

(**Q10 1MA1/3H, June 2022**)

Q60.

Question	Answer	Mark	Mark scheme	Additional guidance
	130	P1	process to find the total number of children, eg 214 – 14 (= 200)	
		P1	process to find the number of children wearing a hat, eg "200" × 35 ÷ 100 (= 70) **or** process to find the multiplier for the percentage of children not wearing a hat, eg (100 – 35) ÷ 100 (= 0.65)	
		P1	for full process to find the number of children not wearing a hat, eg "200" – "70" **or** "200" × "0.65" **or** 214 – "70" – 14	
		A1	cao	

(**Q11 1MA1/2F, Nov 2022**)

Q61.

Question	Answer	Mark	Mark scheme	Additional guidance
	152000	M1	for a complete method eg 165680 ÷ 109 × 100 or 165680 ÷ 1.09 oe	
		A1	cao	

(**Q26 1MA1/2F, Nov 2022**)

Q62.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	11533	P1	for working with 68%, eg 800 × 0.68 (= 544 people) oe or "16960" × 0.68 oe	Percentage calculation could be done at any stage
		P1	for a correct process, other than that of finding a %, eg "544" × 2 (= 1088) or 10.6 × 2 (= 21.2) or 800 × 2 (= 1600) or "544" × 10.6 (= 5766.4) or 800 × 10.6 (= 8480)	
		P1	for full process to find amount of coffee required eg "1088" × 10.6 or "544" × "21.2" or "5766.4" × 2 (= 11532.8) or for an answer of 11532	
		A1	for answer in the range 11532.5 to 11533	If a correct answer within the range is shown in working but incorrectly rounded award full marks.
(b)	Statement	C1	for a correct statement **Acceptable examples** the amount will be more; he will need more coffee it is an underestimate my answer in part (a) means there would not be enough for everyone he will need 12211(.2); needs 678(.4) more **Not acceptable examples** amount will decrease, amount of coffee will change	If figures are given as part of the answer they must be correct, but can allow ft.

(**Q21 1MA1/3F, June 2023**)

Q63.

Question	Answer	Mark	Mark scheme	Additional guidance
	56	P1	for 70 × 80 ÷ 100 oe or for the use of 0.7 × 0.8 (= 0.56) oe	
		A1	cao	

(Q09 1MA1/3H, June 2023)

Q64.

Question	Answer	Mark	Mark scheme	Additional guidance
	120	B1	cao	

(Q05 1MA1/2F, Nov 2023)

Q65.

Question	Answer	Mark	Mark scheme	Additional guidance
	60.48	P1	for a beginning process, eg 72 ÷ 100 × 120 (= 86.4) **OR** 72 ÷ 100 × 30 ÷ 100 (= 0.216)	
		P1	for process to use both percentages, eg [86.4] – ([86.4] × 30 ÷ 100) **or** [86.4] × ((100 – 30) ÷ 100) **or** [86.4] × 30 ÷ 100 (= 25.92) **OR** 72 ÷ 100 × ((100 – 30) ÷ 100) (= 0.504) **OR** 120 × "0.216" (= 25.92)	[86.4] must be a value less than 120
		A1	cao	

(Q15 1MA1/2F, Nov 2023)

Q66.

Question	Answer	Mark	Mark scheme	Additional guidance
	Explanation (supported)	M1	for method to find comparable figures eg 60 × 70 ÷ 100 **or** 45 ÷ 60 ×100 **or** 0.7 **or** 0.75	
		C1	for conclusion eg shows 42 (marks) **or** 75 (%) **or** 0.7 **and** 0.75	Figures need not be supported by words but must not be contradicted.

(Q16 1MA1/1F, Nov 2023)

Q67.

Question	Answer	Mark	Mark scheme	Additional guidance
	400	M1 A1	for 280 ÷ 0.7 oe cao	

(Q27 1MA1/1F, June 2024)

Q68.

Question	Answer	Mark	Mark scheme	Additional guidance
	30	B1	cao	

(Q09 1MA1/1H, June 2024)

Q69.

Question	Answer	Mark	Mark scheme	Additional guidance
	525	M1 A1	for method to find the interest after one year, eg 3500 × 2.5 ÷ 100 (= 87.5) oe **or** 0.025 × 6 (= 0.15) oe **or** for a complete method, eg 3500 × 2.5 × 6 ÷ 100 oe **or** for 4025 **or** 2975 cao	May be implied by, eg 3587.5(0) Award M1 for 3500×1.025^n

(Q15 1MA1/2F, June 2024)

Q70.

Question	Answer	Mark	Mark scheme	Additional guidance
	15% of 88 from correct figures	P1 P1 C1	for first step towards finding comparable figures, eg $\frac{15}{100} \times 88$ (= 13.2) oe **or** $\frac{20}{100} \times 62$ (= 12.4) oe **OR** 15 × 88 (= 1320) **or** 20 × 62 (= 1240) for process to find two comparable figures, eg $\frac{15}{100} \times 88$ (= 13.2) oe **and** $\frac{20}{100} \times 62$ (= 12.4) oe **OR** 15 × 88 (= 1320) **and** 20 × 62 (= 1240) 15% of 88 from 13.2 oe **and** 12.4 oe **OR** 15% of 88 from 1320 **and** 1240	Must have correct figures. Ignore an incorrect difference after a correct decision from correct figures unless it contradicts.

(Q15 1MA1/3F, June 2024)

Q71.

Question	Answer	Mark	Mark scheme	Additional guidance
	29 775	P1	for evidence of using a correct first step eg 25 000 × 0.06 (= 1500) or 25 000 × 1.06 (= 26 500)	
		P1	for evidence of a "compound interest" process eg "26 500" × 0.06 (= 1590) or "26 500" × 1.06 (= 28 090) **or** $25\,000 \times 1.06^t$, $t \geq 2$	
		P1	for a complete process eg $25\,000 \times 1.06^3$ (= 29 775.4)	P3A0 is implied by 4775 or 4776 or 4780 or 4800
		A1	for 29 775 or 29 776 or 29 780 or 29 800	
			SCB1 for 3000 or 4500 or 28000 or 29500 seen if P0 scored	

(**Q25 1MA1/3F, June 2024**)

Q72.

Question	Answer	Mark	Mark scheme	Additional guidance
	29 775	P1	for evidence of using a correct first step eg 25 000 × 0.06 (= 1500) or 25 000 × 1.06 (= 26 500)	
		P1	for evidence of a "compound interest" process eg "26 500" × 0.06 (= 1590) or "26 500" × 1.06 (= 28 090) **or** $25\,000 \times 1.06^t$, $t \geq 2$	
		P1	for a complete process eg $25\,000 \times 1.06^3$ (= 29 775.4)	P3A0 is implied by 4775 or 4776 or 4780 or 4800
		A1	for 29 775 or 29 776 or 29 780 or 29 800	
			SCB1 for 3000 or 4500 or 28000 or 29500 seen if P0 scored	

(**Q04 1MA1/3H, June 2024**)

Q73.

Question	Answer	Mark	Mark scheme	Additional guidance
	Yes (supported)	P1	for start to a process to find a percentage increase, eg $85-76\,(=9)$ or $66-65\,(=1)$ **or** $\frac{85}{76}\,(=1.118...)$ or $\frac{66}{65}\,(=1.015...)$	Accept use of rounded and truncated figures for all marks.
		P1	for process to find a % increase, eg $\frac{"9"}{76}\times 100\,(=11.84...)$ or $\frac{"1"}{65}\times 100\,(=1.53...)$ **or** $\frac{85}{76}\times 100-100\,(=11.84...)$ oe or $\frac{66}{65}\times 100-100$ $(=1.53...)$ oe	May work in decimals or equivalent proportions throughout
		P1	for processes to find both % increases, eg $\frac{"9"}{76}\times 100\,(=11.84...)$ **and** $\frac{"1"}{65}\times 100\,(=1.53...)$ **or** $\frac{85}{76}\times 100-100\,(=11.84...)$ oe **and** $\frac{66}{65}\times 100-100$ $(=1.53...)$ oe	
		C1	for Yes supported by correct figures, eg 11(.842…) ÷ 1.5(38…) = 7.3 to 8 **or** 11(.842...) **and** 1.5(38…) × 7 = 10(.766…) **or** 11(.842…) ÷ 7 = 1.57 to 1.7 **and** 1.5(3…) **or** 0.11(842…) **and** 0.10(766…)	

(**Q25 1MA1/2F, Nov 2024**)

Q74.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	27	B1	cao	
(b)	$\frac{2}{7}$	B1	or any equivalent fraction	
(c)	No (supported)	P1	for method to find the number of children on Friday eg 0.7 × 500 oe (= 350)	
		P1	for method to find the number of children on Saturday eg 720 ÷ 8 × 5 oe (= 450)	
		C1	for No with correct figures, eg No **and** 350 **and** 450 **or** No **and** 100 more on Saturday	Award 0 marks for a correct answer with no supportive working.

(**Q14 1MA1/1F, June 2023**)

Q75.

Question	Working	Answer	Mark	Notes
		988	P1	for a process to find the amount of oil bought in November, eg 750 ÷ 0.5 (=1500) or 75000 ÷ 50 (=1500)
			P1	for a process to find the amount of oil ordered in February, eg "1500" +1000 − 600 (= 1900)
			P1	(indep) for a process to calculate a 4% increase of their amount of oil, eg or "1900" × 1.04 (=1976) or increase in price eg 1.04 × 50 (=52 or 0.52) or 1.04 × 750 (=780)
			P1	for a complete process to find the total cost of the calculated amount of oil eg "52" × "1900" or "780" × "1900" ÷ "1500"
			A1	Cao

(Q15 1MA1/2F, Nov 2017)

Q76.

Paper 1MA1: 2H			
Question	Working	Answer	Notes
(a)		1.8%	P1 for start to process eg. 2000 × 1.025 (= 2050)
			P1 for process to use all given information eg. "2050" × m^2 = 2124.46 or $"2050"\times\left(1+\frac{x}{100}\right)^2 = 2124.46$
			P1 for process to find their unknown eg $m=\sqrt{\frac{2124.46}{2050}}(=1.01799...)$
			A1 for 1.79% – 1.8 %
(b)		200	M1 225 ÷ 1.125 oe
			A1

(Q10 1MA1/2H/N, Specimen papers)

Q77.

Question	Working	Answer	Notes
	$\frac{90}{2}\times 3 = 135$ $\frac{84}{60}\times 100 = 140$	Combination with reason	P1 Links either $\frac{2}{3}$ with 90 and 60% with 84 P1 Process to find original price of microwave oven eg $\frac{90}{2}\times 3$ (=135) P1 Process to find original price of combination oven eg $\frac{84}{60}\times 100$ (=140) A1 Correct original prices £135 and £140 with interpretation of results to conclude that combination oven had greater normal price.

(Q07 1MA1/1H/S2, Specimen papers)

Q78.

Question		Working	Answer	Mark	Notes
			46	2	M1 links 5% with 2.30 or 100 ÷ 5 (= 20) A1 cao

(Q05 1MA1/3H/M1, Specimen papers)

Q79.

Paper 1MA1: 1F			
Question	**Working**	**Answer**	**Notes**
		28	P1 Process to start to solve problem eg. $\frac{3}{5} \times 40$ **or** divide any number in the ratio 3:2 P1 Second step in process to solve problem eg. $\frac{2}{5} \times 10$ or find number of males/females under 25 for candidate's chosen number P1 for complete process A1

(Q25 1MA1/1F/N, Specimen papers)

Q80.

Question	Working	Answer	Mark	Notes
		39%	P1	process to find proportion of group that are students , e.g. $\frac{15}{16}$
			P1	complete process to find the % of girls , e.g. $\frac{15}{16} \times \frac{5}{12}$
			A1	for 39(.0625)
				OR
			P1	process to scale up the ratio of teachers : students, so that students can be divided by 7+5 (=12),, e.g. 1 × 12 : 15 × 12 = 12 : 180 or a process to divide the "180" in the ratio 7:5,, e.g. 180 ÷ 12 × 7 (=105) **and** 180 ÷ 12 × 5 (=75)
			P1	complete process to find the % of girls , e.g. (75 ÷ (12+105+75)) × 100
			A1	for 39(.0625)

(Q23 1MA1/2F/M2, Specimen papers)

Q81.

Question	Working	Answer	Mark	Notes
		36.4	4	P1 a strategy to start to solve the problem e.g. 105 ÷ (5 – 2) (= 35) P1 process to find Laura's share e.g. 385 – 2 × "35" – 5 × "35" (= 140) or 385 ÷ "35" – 2 – 5 (= 4) P1 process to find the percentage Laura gets e.g. "140"÷ 385 × 100 oe or "4" ÷ 11 × 100 oe A1 answer in range 36.3 to 36.4, accept 36%

(Q03 1MA1/3H/M1, Specimen papers)

Q82.

Question	Working	Answer	Mark	Notes
		Yes (supported)	P1 P1 A1 P1 C1 P1 P1 A1 P1 C1	for process to work out the total number of children, e.g. 117 × 4 (= 468) (dep P1) for process to work out total number of adults or the total number of people, e.g. "468" × 5 ÷ 2 (= 1170) or "468" × 7÷ 2 (= 1638) for 1170 or 1638 for process to work out the percentage of theatre full, e.g. $\frac{"468"+"1170"}{2600}\times 100$ (= 63) or for a process to work out 60% of 2600 (= 1560) for a correct conclusion supported by correct figures e.g. 63% or 1560 **and** 1638 OR for a process to work out 60% of 2600, eg. $\frac{60}{100}\times$ 2600 (= 1560) (dep P1) for process to work out this total number of children, e.g. "1560" × 2 ÷ 7 (= 445(.7…)) for 445(.7…) for process to work out children in the circle, eg. "445(.7…)" ÷ 4 (= 111 to 112) for a correct conclusion supported by correct figures e.g. 111 to 112 [Where appropriate accept rounded or truncated values]

cont.				OR
			P1	for a process to find the maximum number of children, eg. 2600 × 2 ÷ 7 (= 742(.8…))
			P1 A1	for process to work out the total number of children, e.g. 117 × 4 (= 468) for 468 and 742(.8…)
			P1	for $\frac{"468"}{"742(.8..)"}\times 100$ (= 63) or process to work out 60% of "742(.8...)" (= 445(.7…))
			C1	for a correct conclusion supported by correct figures e.g. 63% or 468 and 445(.7…) [Where appropriate accept rounded or truncated values]

(Q02 1MA1/2H, June 2017)

Q83.

Question	Answer	Mark	Mark scheme	Additional guidance
	150 000	P1	for process to find cost in 2007, eg 162 000 ÷ 0.9 (= 180 000) oe	
		P1	for process to find cost in 2003, eg [cost in 2007] ÷ 1.2 (= 150 000) oe	Award 2 marks for 162 000 ÷ 1.08 oe
		A1	cao	

(Q11 1MA1/3H, June 2018)

Q84.

Question	Answer	Mark	Mark scheme	Additional guidance
	Shown (supported)	M1	for substitution eg $4 \times 110 + 12$	
		A1	for 452	
		M1	(dep M1) for method to find value(s) needed for comparison eg $\frac{"452" - 442}{442} \times 100$ **OR** $\frac{5}{100} \times 442$ oe (= 22.1) **and** "452" – 442 (= 10) **OR** $\frac{5}{100} \times 442 + 442$ oe (= 464.1) **and** "452"	
		C1	shown with correct comparable values eg 2.2(6...)(%) **OR** 22.1 **and** 10 **OR** 452 **and** 464.1	

(Q20 1MA1/2F, Nov 2019)

Q85.

Question	Answer	Mark	Mark scheme	Additional guidance
	27.5	P1	for process to find number of yellow and green counters, eg 200 – 38 – 52 (= 110) **OR** for process to express red and blue counters as a percentage of 200, eg $\frac{38 + 52}{200} \times 100$ oe (= 45)	
		P1	for process to find number of yellow counters and/or the number of green counters eg "110" ÷ 2 (= 55) **OR** for process to express the sum of the yellow and green counters as a percentage of 200, eg $\frac{"110"}{200} \times 100$ (= 55) **or** 100 – "45" (= 55)	
		P1	for a complete process to express the number of yellow counters as a percentage, eg $\frac{"55"}{200} \times 100$ **or** "55" ÷ 2	
		A1	for 27.5 oe	

(Q17 1MA1/1F, June 2023)

Q86.

Question	Working	Answer	Mark	Notes
		4	M1	for a complete method eg $2.80 \times 100 \div (100-30)$ oe **or** $2.80 \div 0.7$ oe **or** for build up method but must show all intermediate steps unless all figures are correct eg $2.8 \div 7 = 0.4$ and "0.40" × 10 (=4)
			A1	cao

(**Q30 1MA1/1F, Nov 2017**)

Q87.

Paper 1MA1: 2F			
Question	**Working**	**Answer**	**Notes**
		62.5	M1 for 12.5 squares or use of 1 sq = 5% M1 for 12.5÷20×100 oe A1 or 62½

(**Q09 1MA1/2F/S1, Specimen papers**)

Q88.

Question	Answer	Mark	Mark scheme	Additional guidance
(a)	4.52×10^3	M1	for $2.04.... \times 10^7$ oe eg $2.04....\times 10^{-5} \div 10^{-12}$ or $20.4... \times 10^6$ or 204(08163.27) **or** for correct value of T, 4517.(53....), not written in standard form, eg 4520	May be given correct to 3 sig figs or more
		A1	for answer in the range 4.51×10^3 to 4.52×10^3 (SC B1 for $6.32...\times 10^{-1}$)	
(b)	Explanation	M1	for method to find the scale factor or decreased value in T, eg $\sqrt{\frac{1.1}{1.05^3}}$ (= 0.97.....) oe or $\sqrt{\frac{5.6\times10^{-5}\times1.1}{(1.4\times10^{-4}\times1.05)^3}}$ (= 4.40....× 10^3) oe	Award mark for a correct method to calculate the scale factor or the percentage increases in w and d^3 or the decreased value of T
		C1	(dep M1) for explanation eg value of scale factor less than 1, so a decrease in T **OR** compares $4.40...\times 10^3$ with their value of T from (a) provided answer to (a) is greater	This mark may only be awarded if supported by numerical evidence

(**Q09 1MA1/3H, June 2018**)