

INTERNATIONAL GCSE MATHEMATICS

9260/1C

Core Tier Paper 1C

Mark scheme

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2 3 B Y 9 2 6 0 / 1 C / M S

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Key to mark types and abbreviations

M	Method marks are awarded for a correct method which could lead to a correct answer.
A	Accuracy marks are awarded when following on from a correct method. It is not necessary to always see the method. This can be implied.
B	Marks awarded independent of method.
ft	Follow through marks. Marks awarded for correct working following a mistake in an earlier step.
SC	Special case. Marks awarded for a common misinterpretation which has some mathematical worth.
M dep	A method mark dependent on a previous method mark being awarded.
B dep	A mark that can only be awarded if a previous independent mark has been awarded.
oe	Or equivalent. Accept answers that are equivalent. eg accept 0.5 as well as $\frac{1}{2}$
[a, b]	Accept values between a and b inclusive.
[a, b)	Accept values $a \leq \text{value} < b$
3.14 ...	Accept answers which begin 3.14 eg 3.14, 3.142, 3.1416
Use of brackets	It is not necessary to see the bracketed work to award the marks.

Q	Answer	Mark	Comments
1(a)	32	B1	may be on diagram if answer line blank

Q	Answer	Mark	Comments
1(b)	$24 \div 4 + 1$ or $6 + 1$ or $(7 - 1) \times 4$ or $x - 1 = 24 \div 4$ or $x - 1 = 6$	M1	oe
	7	A1	may be on diagram if answer line blank SC1 97 or 5 or $\frac{25}{4}$ oe
	Additional Guidance		
	$24 \times 4 + 1 = 97$		SC1
	$24 \div 4 - 1 = 5$		SC1
	$(24 + 1) \div 4 = \frac{25}{4}$ oe		SC1
	Embedded answer eg $(7 - 1) \times 4 = 24$ with no or incorrect answer selected		M1A0

Q	Answer	Mark	Comments
2(a)	$\frac{1}{3}$	B1	

Q	Answer	Mark	Comments
2(b)	$\frac{5}{100} \times 15$ or 0.05×15 or $1.5 \div 2$	M1	oe implied by 15.75
	0.75	A1	

Q	Answer	Mark	Comments
3(a)	$n - 2$ $n + 3$ $n + 7$	B1	
	Additional Guidance		
	The middle expression may be implied if the other two are correct		

Q	Answer	Mark	Comments
3(b)	$3n + 8$ or $8 + 3n$	B2	B1 $3n$ or (+) 8

Q	Answer	Mark	Comments
4	One and a quarter circles in Yellow	B1	allow any orientation of the quarter circle
	Indication that one circle represents 4 balls or Blue = 12	M1	may be on diagram eg circle = 4 or half circle = 2
	Three circles in Blue	A1ft	correct or ft B0M1 if total is 27
	Additional Guidance		
	Mark intention for circles		

Q	Answer	Mark	Comments
5	$(wx =) 4 \times 5$ or 20	M1	
	$(6w - x =) 24 - 5$ or 19	M1	
	wx and 20 and 19	A1ft	correct or ft M1M0 or M0M1 if both expressions have been evaluated
	Additional Guidance		
	Accept 20 for wx eg 20 and 19 seen (with no wrong working) and 20 chosen		M1M1A1
	$wx = 20$ $6w - x = 29$ $6w - x$ chosen		M1M0A1ft
	$wx = 45$ $6w - x = 19$ wx chosen		M0M1A1ft
	$wx = 4 \times 5 = 9$ $6w - x = 24 - 5 = 18$ $6w - x$ chosen		M1M1A0

Q	Answer	Mark	Comments
6	Always true Never true Always true Always true	B4	B1 for each
	Additional Guidance		
	A tick and a cross in the same row – mark the tick		
	Allow any unambiguous indication		

Q	Answer	Mark	Comments
7	4×16 or 64	M1	
	$110 - \text{their } 64$ or 46	M1dep	oe
	$\text{their } 46 \div 2$	M1dep	
	23	A1	

Q	Answer	Mark	Comments
8(a)	12×2 or 24	M1	may be embedded eg $12 \times 2 + 15$
	39	A1	

Q	Answer	Mark	Comments
8(b)	Alternative method 1		
	$75 - 15$ or 60 or $\frac{C-15}{12}$	M1	may be embedded eg $\frac{75-15}{12}$
	5	A1	
	Alternative method 2		
	$\frac{75 - \text{their } 39}{12} (+2)$ or $3 (+2)$	M1	oe ft their 39 from (a)
	5	A1ft	correct or ft their 39 from (a)
	Additional Guidance		
	If their (a) is 24 (b) 6.25		M1A1ft

Q	Answer	Mark	Comments
9	7×45 or 315 or $600 \times 0.3(0)$ or 180	M1	oe Company A
	$7 \times 45 + 600 \times 0.3(0)$ or 495	M1dep	oe units must be consistent
	7×85 or 595 or $85 \times (1 - 0.2)$ or 68	M1	oe eg $85 - 0.2 \times 85$ Company B implied by 119
	$7 \times 85 \times (1 - 0.2)$ or 476	M1dep	oe eg $595 - 0.2 \times 595$ dep on 3rd M
	495 and 476 and Company B	A1	oe
	Additional Guidance		
	Allow working in cents		
	Using mixed units eg $315 + 18\,000$ for Company A must be recovered		

Q	Answer	Mark	Comments
10	+6 or 6 or -4	M1	implied by $6n \dots$
	2	A1	
	Additional Guidance		
	A difference of -6 must be recovered		

Q	Answer	Mark	Comments
11(a)	$5x - 12$	B2	B1 $3x - 12$ or $5x \dots$
	Additional Guidance		
	$5x - 7$		B1
	$5x$		B1
	$5x - 12$ with further working		B1

Q	Answer	Mark	Comments
11(b)	$2w(3 + y)$	B2	B1 $2(3w + wy)$ or $w(6 + 2y)$

Q	Answer	Mark	Comments
12	$\frac{2}{5} \times 2800$ or 1120	M1	oe amount to Beth
	2800 – their 1120 or 1680	M1dep	oe $\frac{3}{5} \times 2800$ is M2
	$\frac{3}{4} \times$ their 1680 or 1260	M1dep	oe amount to Carl
	140	A1	SC2 280
	Additional Guidance		
	280 from giving Carl $\frac{3}{4}$ of Beth's amount		SC2

Q	Answer	Mark	Comments
13	Vertical line drawn upwards from or through C or point for D vertically above C or horizontal line drawn from or through A to the right or point for D horizontally to the right of A or (D =) (7, 6)	M1	
	(4, 6)	A1	
	Additional Guidance		
	Answer (7, 6) with no other point for D on the diagram		M1A0

Q	Answer	Mark	Comments
14(a)	0	B1	
	2	B1	

Q	Answer	Mark	Comments
14(b)	$320 \div 5$ or 64	M1	oe
	$\sqrt{\text{their } 64}$ or 8	M1	their 64 must not be 320
	their 8×12	M1dep	oe eg $16 + 16 + 8 + 8 + 16 + 16 + 8 + 8$ dep on M2
	96	A1	

Q	Answer	Mark	Comments
15	3 correct lines	B3	B2 2 correct lines B1 1 correct line
	Additional Guidance		
	2, 3, 4, 5 2, 3, 4 3, 4	$2 < x \leq 5$ $2 < x < 5$	B3
	2 lines from one set of integers is choice		

Q	Answer	Mark	Comments
16(a)	$360 - 180 - 135$ or $180 - 135$ or 45 or 12.5% or 0.125 or $\frac{180}{360} - \frac{135}{360}$	M1	oe
	$\frac{45}{360}$ or $\frac{1}{8}$	A1	oe fraction
	Additional Guidance		
	Ignore incorrect simplification once correct answer seen		M1A1

Q	Answer	Mark	Comments
16(b)	Alternative method 1		
	364×2 or 728 or $\frac{135}{360}$ or $\frac{3}{8}$	M1	oe
	$728 \times \frac{135}{360}$	M1dep	oe eg $728 - 364 - 91$
	273	A1	SC2 91
	Alternative method 2		
	$\frac{135}{180}$ or $\frac{3}{4}$	M1	oe
	$\frac{135}{180} \times 364$	M1dep	oe eg $\frac{3}{4} \times 364$ or $364 - 91$
	273	A1	SC2 91
	Alternative method 3		
	$364 \div 180$ or 2.02...	M1	oe
	$135 \times \text{their } 2.02\dots$	M1dep	oe
	273	A1	SC2 91
	Additional Guidance		
	Allow work for part (b) seen in part (a) or on the diagram eg 728 seen in (a) would gain M1 in (b)		
	SC2 is for the number of customers who said No		

Q	Answer	Mark	Comments
17(a)	3^{10}	B1	

Q	Answer	Mark	Comments
17(b)	5^{15}	B1	

Q	Answer	Mark	Comments
17(c)	11^{12}	B1	

Q	Answer	Mark	Comments
18	Might be true Definitely true Cannot be true	B3	B1 for each
	Additional Guidance		
	A tick and a cross in the same row – mark the tick		
	Allow any unambiguous indication		

Q	Answer	Mark	Comments
19	11^2 or 121 and 8^2 or 64 or 185	M1	implied by 57 or $\sqrt{57}$ or 7.5(4...) or 7.55
	$\sqrt{11^2 + 8^2}$ or $\sqrt{121 + 64}$ or $\sqrt{185}$	M1dep	
	13.6(...)	A1	accept 14 with M1 awarded
	Additional Guidance		
	Ignore incorrect rounding or truncation once correct answer seen		M1M1A1
	Answer 13.6(...) with no working		M1M1A1
	Answer 13.6(...) from trigonometry or accurate drawing only		M0M0A0

Q	Answer	Mark	Comments
20	Alternative method 1		
	$34 \div 2$ or 17	M1	implied by 119 or 51
	$(7 + 3 + 2) \times$ their 17 or $12 \times$ their 17	M1dep	oe eg $7 \times 17 + 3 \times 17 + 2 \times 17$ or $119 + 51 + 34$
	204 and Yes with M2 awarded	A1	
	Alternative method 2		
	$204 \div (7 + 3 + 2)$ or 17	M1	oe eg $204 \div 12$
	their 17×2	M1dep	
	34 and Yes with M2 awarded	A1	
	Alternative method 3		
	$(204 - 34) \div (7 + 3)$ or 17	M1	oe eg $170 \div 10$
	their 17×2	M1dep	
	34 and Yes with M2 awarded	A1	
	Additional Guidance		
	Yes may be implied if full method shown		
	12×34 with no other workings		M0
	$12 \times 34 \div 2$		at least M2

Q	Answer	Mark	Comments
21	$180 \div 3$ or 60	M1	may be seen on diagram implied by 120
	$180 - \frac{360}{5}$ or $180 - 72$ or $\frac{180 \times (5-2)}{5}$ or 108	M1	oe may be seen on diagram
	132	A1	may be seen on diagram

Q	Answer	Mark	Comments
22(a)	16 in right-hand section of Y	B1	
	13 in rectangle outside circles	B1ft	correct or ft 29 – their 16
	Additional Guidance		
	23 in right-hand Y and 6 in rectangle outside circles		B0B1ft

Q	Answer	Mark	Comments
22(b)	$24 + 7 + \text{their } 16 + \text{their } 13$ or $31 + 29$ or 60	M1	ft their completed diagram in (a)
	$\frac{31}{60}$ or 0.516... or 0.517 or 0.52 or 51.6...% or 51.7% or 52%	A1ft	oe fraction, decimal or percentage correct or ft their completed diagram in (a) if gives a probability > 0 and < 1
	Additional Guidance		
	ft must be to 2 sf or better		
	Ignore incorrect simplification or change of form once correct probability seen eg $\frac{31}{60}$ seen, answer 51%		M1A1

Q	Answer	Mark	Comments
23	$\frac{10}{16}$ or 0.625 or $\frac{16}{10}$ or 1.6 or $\frac{12}{16}$ or 0.75 or $\frac{16}{12}$ or 1.33...	M1	oe
	$\frac{10}{16} \times 12$ or $\frac{12}{16} \times 10$ or 7.5	M1dep	oe eg $12 \div \frac{16}{10}$
	2.5	A1	oe
	Additional Guidance		
	$10 \times 12 \div 16$		M1M1
	$7.5 : 10$ or $10 : 7.5$		M1M1
	$\frac{DX}{10} = \frac{12}{16}$ or $16 \times DX = 10 \times 12$		M1
	$DX : 10 = 12 : 16$ oe with no further relevant working		M0