

OXFORD

INTERNATIONAL
AQA EXAMINATIONS

INTERNATIONAL GCSE MATHEMATICS CORE 9260/2C

Paper 2C

Mark scheme

November 2021

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Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

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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)	6000	B1	

Q	Answer	Mark	Comments
1(b)	$\frac{9}{100}$	B1	

Q	Answer	Mark	Comments
2	$10n$	B1	

Q	Answer	Mark	Comments
3	5300	B1	

Q	Answer	Mark	Comments
4	$x = 3$ and $y = 1$	B2	B1 two numbers where $2x + y = 7$
	Additional Guidance		
	$x = 0$ and $y = 7$		B1
	$x = 1$ and $y = 5$		B1
	$x = 2$ and $y = 3$		B1
	$x = 3.5$ and $y = 0$		B1
	$x = 1.5$ and $y = 4$		B1
	$x = 7$ and $y = -7$		B1
$x = -1$ and $y = 9$		B1	

Q	Answer	Mark	Comments
5(a)	Run	B1	

Q	Answer	Mark	Comments
5(b)	2000	B1	

Q	Answer	Mark	Comments
5(c)	12 (000)	B1	implied by correct answer
	their $12\ 000 \div 96$	M1	
	125 or 0.125 thousand	A1ft	ft their 12 000 only if in thousands
	Additional Guidance		
	$16\ 000 \div 96 = 166.66$ or 166.67		

Q	Answer	Mark	Comments
6	The shaded area is a segment	B1	
	The straight line AB is a chord	B1	
	Additional Guidance		
	Allow any unambiguous indication		

Q	Answer	Mark	Comments	
7	$12 \div 2$ or 6	M1	oe	
	12×3 or 36	M1	oe 54 implies M2	
	$\frac{2}{9}$	A1ft	oe fraction ft M1M0 or M0M1	
	Additional Guidance			
	$\frac{12}{54}$			M1M1A1
	Ignore incorrect simplification once correct fraction seen eg $\frac{12}{54} = \frac{4}{9}$			M1M1A1
	$12 \times 2 = 24$ $12 \times 3 = 36$ Answer $\frac{1}{6}$			M0 M1 A1ft
	$12 \div 2 = 6$ $12 \div 3 = 4$ Answer $\frac{6}{11}$			M1 M0 A1ft
	$12 \times 2 = 24$ $12 \div 3 = 4$ Answer $\frac{3}{10}$			M0 M0 A0

Q	Answer	Mark	Comments
8	Alternative method 1		
	10 + 10 – 17 or 3 or 2 × 10 × 10 or 200 or 17 × 10 or 170	M1	oe may be on diagram implied by 30
	their 170 – 10 × their 3 or their 200 – 10 × 2 × their 3	M1dep	oe eg 170 – 30 or 200 – 60 their 3 and their 170 and their 200 must be from correct methods
	140	A1	
	Alternative method 2		
	17 – 10 or 7 or 14	M1	oe may be on diagram implied by 70
	2 × 10 × their 7 or 2 × 70 or 10 × their 14	M1dep	oe
	140	A1	
	Additional Guidance		
	M1 may be awarded for correct work with no or incorrect answer, even if this is seen amongst multiple attempts		

Q	Answer	Mark	Comments
9(a)	91	B1	

Q	Answer	Mark	Comments
9(b)	325 or 550	B2	B1 3-digit multiple of 25 eg 125 or 600 or 3-digit number with a digit sum of 10 other than 811, 181, 118

Q	Answer	Mark	Comments
10(a)	South	B1	

Q	Answer	Mark	Comments
10(b)	270°	B1	

Q	Answer	Mark	Comments
10(c)	$24 \div 6$ or 4 or $\frac{5}{6}$	M1	oe
	20	A1	

Q	Answer	Mark	Comments
11	$P(0, 30)$ and $Q(16, 0)$	B2	B1 $P(0, 30)$ or $Q(16, 0)$ or $P(30, 0)$ and $Q(0, 16)$ or $P(16, 0)$ and $Q(0, 30)$

Q	Answer	Mark	Comments
12(a)	F	B1	
	Additional Guidance		
	Condone 1 oe		B1

Q	Answer	Mark	Comments
12(b)	C	B1	
	Additional Guidance		
	Condone 0.4 oe		B1

Q	Answer	Mark	Comments
12(c)	D	B1	
	Additional Guidance		
	Condone 0.6 oe		B1

Q	Answer	Mark	Comments			
13(a)	Fully correct table	B2	B1 3 or more correct			
	Additional Guidance					
			B2			
	Pattern	1		2	3	4
Number of square tiles	1	4		9	16	25
Number of triangular tiles	4	8	12	16	20	

Q	Answer	Mark	Comments
13(b)	$\sqrt{200}$ or $10\sqrt{2}$ or 14.1(...) or $\sqrt{250}$ or $5\sqrt{10}$ or 15.8(...) or 225 or 15^2 identified	M1	
	$\sqrt{225}$ or 15	A1	oe eg $15^2 = 225$ may be implied by answer of 60
	60	A1ft	ft their 15×4 provided it is an integer and working for M1 seen
	Additional Guidance		
	60 with no working		M1A1A1
	$\sqrt{250} = 15.8$ 16 (squares) Answer 64		M1A0A1ft
	$\sqrt{250} = 15.8$ $15.8 \times 4 = 63.2$		M1A0A0ft
	$16 \times 4 = 64$ with no working for 16		M0A0A0ft

Q	Answer	Mark	Comments	
14	Any two correct pairs of coordinates	M1	eg $(-2, -5)$, $(-1, 2)$, $(0, 1)$, $(1, 4)$ or $(2, 7)$ may be in a table implied by points plotted $\pm \frac{1}{2}$ small square	
	At least two correct points plotted or at least two of their points plotted correctly	M1	implied by correct line of any length $\pm \frac{1}{2}$ small square	
	Straight, ruled line from $(-2, -5)$ to $(2, 7)$	A1	ignore line outside the domain $[-2, 2]$	
	Additional Guidance			
	Ignore extra points that are incorrect			

Q	Answer	Mark	Comments																														
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	1		I																														
	2	P		R																													
3				E																													
4					S																												
Additional Guidance																																	
A letter appearing twice is choice so does not score for that shape																																	
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3		I																															
4	P		R		S																												

Q	Answer	Mark	Comments
16(a)	360 – 216 or 144 or $3y + y + 216 = 360$	M1	oe equation eg $x + \frac{x}{3} = 360 - 216$ any letter
	their $144 \div (3 + 1)$ or 36 or their 144×3 or 432	M1dep	may be embedded eg $\frac{144}{4} \times 3$
	108	A1	

Q	Answer	Mark	Comments
16(b)	Alternative method 1		
	$\frac{216}{360}$ or $\frac{3}{5}$ or 0.6 or $\frac{360}{216}$ or $\frac{5}{3}$ or 1.66(6...) or 1.667 or 1.67 or $\frac{400}{360}$ or $\frac{10}{9}$ or 1.11(1...) or $\frac{360}{400}$ or $\frac{9}{10}$ or 0.9	M1	oe
	$\frac{216}{360} \times 400$	M1dep	oe eg $400 \div \frac{360}{216}$ or $216 \div 0.9$
	240	A1	
	Alternative method 2		
	$400 - \frac{\frac{4}{3} \times \text{their (a)}}{360} \times 400$	M2	oe
240	A1ft	ft if an integer answer	

Q	Answer	Mark	Comments
17(a)	63	B1	

Q	Answer	Mark	Comments
17(b)	$5y = 18x$ or $\frac{y}{18} = \frac{x}{5}$ or $\frac{5y}{18}$ or $5 \times y \div 18$	M1	oe eg $5 \times y = 18 \times x$
	$x = \frac{5y}{18}$ or $x = \frac{5}{18}y$	A1	oe in the form $x =$ or $= x$
	Additional Guidance		
	$x = [0.277, 0.28] y$		M1A1
	Allow $y.5$ for $y \times 5$		
$y5$ is acceptable for the M mark but not the A mark			

Q	Answer	Mark	Comments
18	$3cd(2d - c)$	B2	B1 $3c(2d^2 - cd)$ or $3d(2cd - c^2)$ or $cd(6d - 3c)$
	Additional Guidance		
	Allow coefficient of -1 , eg $-1c$		
	Correct answer followed by further incorrect working		B1
	For B1 need 2 elements as common factors eg1 $3(2cd^2 - c^2d)$ eg2 $c(6d^2 - 3cd)$		B0 B0
	Condone multiplication signs for B2 eg $3cd \times (2 \times d - c)$		B2
	Condone multiplication signs for B1 eg1 $3d \times (2cd - c^2)$ eg2 $c \times d \times (d \times 6 - c \times 3)$		B1 B1
Condone missing final bracket eg1 $3cd(2d - c$ eg2 $3c(2d^2 - cd$		B2 B1	

Q	Answer	Mark	Comments
19	80	B1	

Q	Answer	Mark	Comments
20	$\frac{31}{15}$	B1	

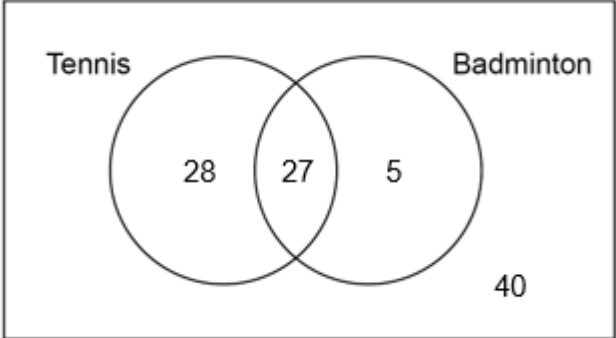
Q	Answer	Mark	Comments
21	Alternative method 1		
	2500 – 2350 or 150	M1	
	$\frac{\text{their } 150}{2500} (\times 100)$ or 0.06 ($\times 100$)	M1dep	oe
	6	A1	
	Alternative method 2		
	$\frac{2350}{2500} (\times 100)$ or 0.94 or 94	M1	
	(1 – their 0.94) ($\times 100$) or 0.06 ($\times 100$) or 100 – their 94	M1dep	oe
	6	A1	
	Additional Guidance		
	2350 – 2500 = –150 leading to –0.06 and answer 6		M1M1A1
	Condone negative values for up to M2 eg 2350 – 2500 = –150 leading to –0.06 and answer –6		M1M1A0
	0.06 or 6 in working but 94 on answer line		M1M1A0
$\frac{2500 - 2350}{2500} (\times 100)$		M1M1	

Q	Answer	Mark	Comments
22	Could be even or odd Must be even Must be odd	B3	B1 each correct row
	Additional Guidance		
	Allow a cross if it's the only answer in that row		
	If a combination of ticks and crosses are used in a row, mark the tick(s)		

Q	Answer	Mark	Comments
23	Alternative method 1		
	Two proper fractions for left hand side with a valid common denominator	M1	eg $\frac{16}{24}$ (and $\frac{11}{24}$) or $\frac{32}{48}$ and $\frac{22}{48}$
	(3) $\frac{27}{24}$ with M1 seen or (2 + 1) $\frac{27}{24}$ with M1 seen	M1dep	oe eg (3) $\frac{54}{48}$ with M1 seen
	$4\frac{3}{24} = 4\frac{1}{8}$ with M2 seen or $3\frac{9}{8} = 4\frac{1}{8}$ with M2 seen or $3 + 1\frac{3}{24} = 4\frac{1}{8}$ with M2 seen or $2 + 1 + 1\frac{3}{24} = 4\frac{1}{8}$ with M2 seen	A1	oe eg $4\frac{6}{48} = 4\frac{1}{8}$ with M2 seen or $3 + 1\frac{6}{48} = 4\frac{1}{8}$ with M2 seen
	Alternative method 2		
	Two improper fractions for left hand side with a valid common denominator	M1	eg $\frac{64}{24}$ and $\frac{35}{24}$ or $\frac{128}{48}$ and $\frac{70}{48}$
	$\frac{99}{24}$ with M1 seen	M1dep	oe eg $\frac{198}{48}$ with M1 seen
	$4\frac{3}{24} = 4\frac{1}{8}$ with M2 seen or $\frac{33}{8} = 4\frac{1}{8}$ with M2 seen	A1	oe eg $4\frac{6}{48} = 4\frac{1}{8}$ with M2 seen
	Additional Guidance		
	Condone working with both sides to show they come to a common value eg right side changed to $\frac{33}{8}$ and left side worked out to be $\frac{33}{8}$		M1M1A1

Q	Answer	Mark	Comments
24	$3x + 12$ or $2x - 4$	M1	
	$5x + 8$	A1	
	Additional Guidance		
	Do not ignore further working		

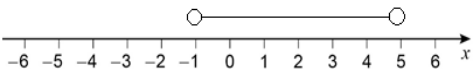
Q	Answer	Mark	Comments
25	12	B1	
	$\pi \times (\text{their } 12)^2 \times 30$	M1	oe
	4320π or [13564.8, 13573.44]	A1ft	ft B0M1 accept 13600 with $\pi \times 12^2 \times 30$ oe seen

Q	Answer	Mark	Comments
26	$55 - 27$ or 28 or $32 - 27$ or 5 or $55 + 32 - 27$ or 60	M1	may be seen on diagram
	$100 - \text{their } 28 - \text{their } 5 - 27$ or $100 - (55 + 32 - 27)$ or 40	M1dep	may be seen on diagram at least one of their 28 and their 5 must be from a correct method
	$\frac{40}{100}$ or 0.4 or 40%	A1	oe fraction, decimal or percentage
	Additional Guidance		
	ξ 	M2	

Q	Answer	Mark	Comments
27(a)	$360 \div 5 (= 72)$ or $540 \div 5 = 108$ and $108 \div 2 = 54$ and $54 + 54 + 72 = 180$	B1	oe eg $5 \times 72 = 360$

Q	Answer	Mark	Comments
27(b)	Alternative method 1		
	$\sin(72 \div 2)$ or $\sin 36$	M1	
	$4 \times$ their $\sin 36$ or 2.35... or 2.4	M1dep	implied by answer 4.8
	4.7(0...)	A1	
	Alternative method 2		
	$\cos((180 - 72) \div 2)$ or $\cos 54$	M1	oe
	$4 \times$ their $\cos 54$ or 2.35... or 2.4	M1dep	implied by answer 4.8
	4.7(0...)	A1	

Q	Answer	Mark	Comments	
28(a)	$3x \geq 4 - 10$ or $3x \geq -6$ or $-3x \leq 10 - 4$ or $-3x \leq 6$ or -2	M1		
	$x \geq -2$ or $-2 \leq x$	A1		
	Additional Guidance			
	$x \leq -2, x > -2, x < -2$ or $x = -2$ imply M1			
	$x \geq -2$ in working and -2 on answer line			M1A0

Q	Answer	Mark	Comments
28(b)		B1	Accept the circles shown on the number line