

INTERNATIONAL GCSE MATHEMATICS

9260/1C

Core Tier Paper 1C

Mark scheme

June 2024

Version: 1.0 Final



2 4 6 Y 9 2 6 0 / 1 C / M S

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)	600 005	B1	
	Additional Guidance		
	Ignore punctuation		

Q	Answer	Mark	Comments
1(b)	17 200	B1	accept in words
	Additional Guidance		
	Ignore punctuation		

Q	Answer	Mark	Comments
1(c)	3 thousand(s) or thousand(s)	B1	accept in words or digits eg 3000 or 1000 or three thousand
	Additional Guidance		
	(3) thousandths		B0
	Ignore punctuation		

Q	Answer	Mark	Comments
2(a)	36	B1	
	Additional Guidance		
	May be seen on diagram		

Q	Answer	Mark	Comments
2(b)	$12 \div 3$ or 4 or $x + 5 = 12 \div 3$ or $x + 5 = 4$ or $(-1 + 5) \times 3 = 12$	M1	oe
	-1	A1	SC1 31 or 9 or $\frac{7}{3}$ oe
	Additional Guidance		
	May be seen on diagram		
	Allow other letters eg $y + 5 = 4$		
	The SC marks come from $12 \times 3 - 5 = 31$ (one error) $12 \div 3 + 5 = 9$ (one error) $(12 - 5) \div 3 = \frac{7}{3}$ (correct operations, but wrong order)		

Q	Answer	Mark	Comments
3	$3x + 2.5 + 2.95 + 2.75 = 13.45$ or $13.45 - 2.5 - 2.95 - 2.75$ or $13.45 - 8.2$ or 5.25	M1	any letter oe eg $13.45 - (2.5 + 2.95 + 2.75)$ may be seen in table
	$(13.45 - 2.5 - 2.95 - 2.75) \div 3$ or $5.25 \div 3$	M1dep	oe
	1.75	A1	
	Additional Guidance		
	Condone $3x$ as a single letter eg $y + 2.5 + 2.95 + 2.75 = 13.45$		M1

Q	Answer	Mark	Comments
4(a)	pentagon	B1	

Q	Answer	Mark	Comments
4(b)	rhombus	B1	

Q	Answer	Mark	Comments									
5	Fully correct table <table><tr><td></td><th>Square number</th><th>Not a square number</th></tr><tr><th>Even number</th><td>64</td><td>24</td></tr><tr><th>Odd number</th><td>49</td><td>55</td></tr></table>		Square number	Not a square number	Even number	64	24	Odd number	49	55	B2	B1 two or three correct or 64 and 49 in the Square number column and 24 and 55 in the Not a square number column or 64 and 24 in the Even number row and 49 and 55 in Odd number row
		Square number	Not a square number									
	Even number	64	24									
	Odd number	49	55									
	Additional Guidance											
<table><tr><td></td><th>Square number</th><th>Not a square number</th></tr><tr><th>Even number</th><td>64</td><td>49</td></tr><tr><th>Odd number</th><td>24</td><td>55</td></tr></table>		Square number	Not a square number	Even number	64	49	Odd number	24	55	B1		
	Square number	Not a square number										
Even number	64	49										
Odd number	24	55										
<table><tr><td></td><th>Square number</th><th>Not a square number</th></tr><tr><th>Even number</th><td>49</td><td>24</td></tr><tr><th>Odd number</th><td>64</td><td>55</td></tr></table>		Square number	Not a square number	Even number	49	24	Odd number	64	55	B1		
	Square number	Not a square number										
Even number	49	24										
Odd number	64	55										
<table><tr><td></td><th>Square number</th><th>Not a square number</th></tr><tr><th>Even number</th><td>24</td><td>64</td></tr><tr><th>Odd number</th><td>49</td><td>55</td></tr></table>		Square number	Not a square number	Even number	24	64	Odd number	49	55	B1		
	Square number	Not a square number										
Even number	24	64										
Odd number	49	55										

Q	Answer	Mark	Comments
6	3.19	B1	oe
	−2	B1	
	10	B1	oe
	$\frac{1}{2}$	B1	oe
	Additional Guidance		
	If boxes are blank, mark intention if clear		

Q	Answer	Mark	Comments
7	D C A B	B2	B1 C A _ _ or _ C A _ but not D C A B or D _ _ _ but not D C A B
	Additional Guidance		
	Ignore any values		

Q	Answer	Mark	Comments
8(a)	(Year) 9	B1	
	Additional Guidance		
	Ignore percentages if stated		

Q	Answer	Mark	Comments
8(b)	0.28×450	M1	oe
	126	A1	
	Additional Guidance		
	Build-up methods must be correct or show full method		
	Work beyond 126 eg $450 - 126$		M1A0

Q	Answer	Mark	Comments	
8(c)	Fully correct bar drawn with correct bar width and gap	B3	B2 bar drawn with correct bar width and gap and total bar height of 100% and 1 of 45% for Cycle, 25% for Bus and 30% for Walk B1 at least 1 of 25% for Bus and 45% for Cycle or 30% for Walk drawn correctly on bar chart (correct height, bar width and gap)	
	Additional Guidance			
	Correct sections are 45% for Cycle, 25% for Bus and 30% for Walk			
	Bar does not need to be shaded or labelled			
	Bar not totalling 100% can score max B1			
	25% for Bus or 45% for Cycle may be seen in working or on bar chart for B1			

Q	Answer	Mark	Comments
9(a)	A and (A =) 14 and (B =) 12	B2	B1 (A =) 14 or (B =) 12 14 and/or 12 may be on the diagram
	Additional Guidance		
	Ignore reference to areas of any shapes and perimeters of the other shapes		
	Ignore units		
	If answer line blank, accept A clearly indicated in working		
	Accept 14 on the answer line in place of A with 12 seen for B		B2

Q	Answer	Mark	Comments
9(b)	E	B1	

Q	Answer	Mark	Comments
9(c)	B	B1	

Q	Answer	Mark	Comments
9(d)	Any correct reflection of shape with corresponding mirror line shown	B2	B1 any correct reflection of shape with no or incorrect mirror line
	Additional Guidance		
	Mark intention for mirror line and shape		
	Ignore internal lines		
	For B2, if there is more than one shape and/or more than one mirror line, apply the rules of choice		
	Any one correct reflection of the shape with other incorrect shapes or mirror lines will score B1		

Q	Answer	Mark	Comments
10(a)	Any decimal in the range (0.25, 0.4)	B1	
	Additional Guidance		
	Ignore any fractions unless on answer line		

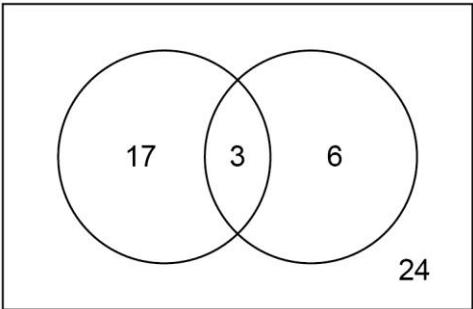
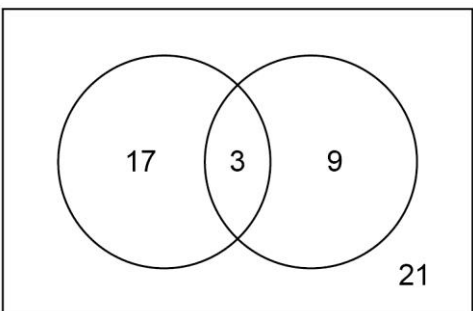
Q	Answer	Mark	Comments
10(b)	Any fraction with a value in the range (0.6, 0.75)	B1	

Q	Answer	Mark	Comments
10(c)	$\frac{11}{9}$	B1	

Q	Answer	Mark	Comments
11(a)	$2y + 13$	B2	B1 $2y \dots$ or $\dots (+) 13$
	Additional Guidance		
	$2y + 13$ followed by further work eg $15y$		B1
	$y^2 + 13$		B1

Q	Answer	Mark	Comments
11(b)	2	B1	
	Additional Guidance		
	$\frac{10x}{5x}$ or $\frac{10}{5}$ or $\frac{2}{1}$		B0

Q	Answer	Mark	Comments
11(c)	$3(7c - 8d)$	B1	
	Additional Guidance		
	Condone missing final bracket ie $3(7c - 8d$		B1
	Allow multiplying back out to check their answer		
	Further incorrect work after a correct response is B0		B0
	$3(c7 - d8)$		B0
	$3 \times (7c - 8d)$		B0

Q	Answer	Mark	Comments
12(a)	6 in correct section	B1	
	24 in correct section	B1ft	ft 30 – their 6 their 6 must be < 30
	Additional Guidance		
	ξ 		B1B1
	ξ 		B0B1ft

Q	Answer	Mark	Comments
12(b)	$\frac{20}{50}$	B2	oe decimal, fraction or percentage B1 20 seen
	Additional Guidance		
	Ignore any incorrect cancelling or attempt to change to a decimal or percentage once correct fraction seen		
	$\frac{17}{20}$		B1
	$\frac{17}{50}$		B0

Q	Answer	Mark	Comments
13	$180 - 35$ or 145	M1	may be on diagram
	their $145 \div (1 + 4)$ or 29	M1dep	may be on diagram
	116	A1	may be on diagram

Q	Answer	Mark	Comments	
14	$A(-3, 0)$ and $B(0, -7)$	B2	B1 $A(-3, 0)$ or $B(0, -7)$ SC1 $A(0, -3)$ and $B(-7, 0)$ or $A(0, -7)$ and $B(-3, 0)$	
	Additional Guidance			
	Accept eg $A(-3^x, 0^y)$			
	Do not accept eg $A(-3x, 0y)$			

Q	Answer	Mark	Comments
15(a)	$\frac{3}{5}$	B1	oe fraction, decimal or percentage
	Additional Guidance		
	mark with part (b)		

Q	Answer	Mark	Comments
15(b)	$1 - \left(\frac{2}{5} + \frac{1}{5} + \frac{1}{4} \right)$ or $1 - \left(\text{their } \frac{3}{5} + \frac{1}{4} \right)$	M1	oe ft from part (a)
	$\frac{3}{20}$ or 0.15 or 15%	A1ft	oe fraction ft their $\frac{3}{5}$ from part (a)
	Additional Guidance		
	mark with part (a)		

Q	Answer	Mark	Comments
15(c)	100×4 or 400 or $100 \times \frac{1}{5}$ or 20 or $100 \times \frac{4}{5}$	M1	oe 400 may be implied by (red =) 160 or (yellow =) 60
	80	A1	

Q	Answer	Mark	Comments
16(a)	m/s	B1	
	Additional Guidance		
	Ignore any circling of units in the list		

Q	Answer	Mark	Comments
16(b)	kg/m ³	B1	
	Additional Guidance		
	Ignore any formulae		

Q	Answer	Mark	Comments
17	$r^2 = \frac{81}{16}$ or $\frac{9}{4}$	M1	oe eg $\frac{d^2}{4} = \frac{81}{16}$
	$\frac{9}{2}$ or 4.5	A1	oe SC1 4.5π oe
	Additional Guidance		
	$r^2 = \frac{81}{16}$ followed by $r = -2.25$ and $r = 2.25$ is not choice		

Q	Answer	Mark	Comments
18	(1.4, 1.6) and (−2.6, −2.4)	B2	oe either order B1 (1.4, 1.6) or (−2.6, −2.4)

Q	Answer	Mark	Comments
19	13^2 or 169 and 8^2 or 64	M1	implied by 105 or 233 or $\sqrt{233}$ or 15.2(6...) or 15.3
	$\sqrt{13^2 - 8^2}$ or $\sqrt{105}$	M1dep	
	10.2(4...) or 10.25	A1	
	Additional Guidance		
	Ignore incorrect rounding / truncation once correct answer seen		
	Answer 10.2(4...) or 10.25 with no working		M1M1A1
	Answer 10.2(4...) or 10.25 from trigonometry or accurate drawing		M0M0A0

Q	Answer	Mark	Comments
20	Alternative method 1		
	$3x + x = 25 + 6$	M1	oe correct equation with elimination of one variable implied by $4x = a$, where $a > 25$ or $bx = 31$, where $b > 3$
	$4x = 31$ or $x = 7.75$	A1	oe
	$x = 7.75$ and $y = 1.75$	A1	oe
	Alternative method 2		
	$y - 3y = 25 - 3 \times 6$	M1	oe correct equation with elimination of one variable implied by $3x - 3y = 18$ and $4y = a$, where $a < 25$ and $a \neq 18$ or 6
	$4y = 7$ or $y = 1.75$	A1	oe
	$x = 7.75$ and $y = 1.75$	A1	oe
	Alternative method 3		
	$25 - 3x = x - 6$ or $\frac{25 - y}{3} = 6 + y$	M1	oe correct equation with elimination of one variable eg $3x + (x - 6) = 25$ or $3(6 + y) + y = 25$
	$4x = 31$ or $x = 7.75$ or $4y = 7$ or $y = 1.75$	A1	oe
	$x = 7.75$ and $y = 1.75$	A1	oe
	Additional Guidance		
	M1 may be awarded for correct work with no answer or incorrect answer, even if this is seen amongst multiple attempts		
	For the A marks accept fractions eg $\frac{31}{4}$ but not divisions eg $31 \div 4$		
	One correct value (not from incorrect working) with one incorrect value (or no second value)		M1A1A0
	Embedded correct values in both equations		M1A1A0
	Embedded correct values in one equation only		M1A0A0

Q	Answer	Mark	Comments
21	75 × 8 or 600 or (75 + 2) × 9 or 693	M1	oe
	(75 + 2) × 9 – 75 × 8 or 693 – 600	M1dep	oe eg 75 + 9 × 2
	93	A1	
	Additional Guidance		
	Correct answer followed by further work		M1M1A0

Q	Answer	Mark	Comments
22(a)	The fixed cost is \$3.5(0) and the cost per kilometre is \$1.25	B2	B1 The fixed cost is \$3.5(0) oe or the cost per kilometre is \$1.25 oe
	Additional Guidance		
	Allow equivalents for B1 but not for B2 eg1 (fixed cost \$) $\frac{14}{4}$ eg2 (cost per kilometre \$) $\frac{5}{4}$ eg3 The fixed cost is \$ $\frac{14}{4}$ and the cost per kilometre is \$ $\frac{5}{4}$		B1 B1 B1
	\$1.25d oe (with no other creditworthy work)		B0

Q	Answer	Mark	Comments
22(b)	Alternative method 1		
	Method to find gradient or correct cost per n kilometres (excluding the fixed cost)	M1	eg $\frac{10-4}{5}$ or $\frac{6}{5}$ or 1.2 or $\frac{5.2-4}{1}$ eg 2.4 for 2 or 3.6 for 3 or 4.8 for 4 or 6 for 5 may be on diagram
	Scaling for 12 kilometres (with or without the fixed cost) or $\frac{92}{5}$	M1dep	eg their 1.2×12 or $\frac{72}{5}$ or 14.4 or 2.4×6
	18.4(0)	A1	
	Alternative method 2		
	Combines correct readings for 12 kilometres	M1	eg $10 + 10 + 6.4$ or 6.4×6
	Correct method for total cost	M1dep	eg $10 + 10 + 6.4 - 4 - 4$ or $6.4 \times 6 - 4 \times 5$ or $\frac{92}{5}$
	18.4(0)	A1	
	Additional Guidance		
	In Alt 2 the calculation must be seen to award M1 eg1 $10 \times 2 + 6.4$ eg2 26.4 with no calculation eg3 $26.4 - 8$ (original calculation not seen but recovered to give fully correct method)	M1 M0 M1M1	
	Only using the formula from part (a)	M0M0A0	

Q	Answer	Mark	Comments
23(a)	$2x - 14 \leq 30$ or $2x \leq 44$ or $x - 7 \leq 15$ or 22	M1	oe
	$x \leq 22$ or $22 \geq x$	A1	
	Additional Guidance		
	Allow use of other symbols if recovered to $x \leq 22$ or $22 \geq x$		M1A1
	$x \leq 22$ seen in working, Answer 22		M1A0
	$x \leq = 22$ or $x <= 22$		M1A0
	Embedded answer $2(22 - 7) \leq 30$		M1A0
	Answer only $x < 23$		M0A0
	Allow interval notation eg $(-\infty, 22]$		

Q	Answer	Mark	Comments
23(b)	-2 -1 0 1 2	B2	B1 4 correct values and no extras or 5 correct values and 1 extra value or $-3 < y \leq 2$ or $(-3, 2]$ or $-3 < y$ or $y \leq 2$ or -6 -3 0 3 6
	Additional Guidance		
	-3 -2 -1 0 1 2		B1
	-2 -1 1 2		B1
	-2 -1 0 1		B1
	-3 -2 -1 0 1		B0

Q	Answer	Mark	Comments
24	180 – 120 or 60 or 120 + 180	M1	oe May be seen on diagram
	300	A1	
	Additional Guidance		
	Correct answer followed by further work		M1A0
	M1 may be awarded for correct work with no answer or incorrect answer, even if this is seen amongst multiple attempts		

Q	Answer	Mark	Comments
25	Alternative method 1		
	Arc, centre B , and at least 60° intersecting BC	M1	
	Second arc, same radius, centred where first arc crosses BC , intersecting with first arc and AB drawn	A1	± 2 mm SC1 fully correct construction centre at C
	Alternative method 2		
	Arc, centre B , radius BC , in correct position for 60° angle	M1	
	Second arc, radius BC , centre C , intersecting with first arc and AB drawn	A1	± 2 mm SC1 fully correct construction centre at C
	Additional Guidance		
	Angle $ABC = 60^\circ$ with no or incorrect construction arcs drawn		M0A0
	Allow construction to be above or below line BC		