CAMBRIDGE
International Education

Cambridge IGCSE™

MATHEMATICS **0580/31**

Paper 3 (Core) **May/June 2026**

MARK SCHEME

Maximum Mark: 80

Published

This mark scheme contains the instructions and marking guidance that our examiners used to mark candidate responses for this component.

Before they start marking, examiners complete a standardisation process. They review a range of candidate responses and discuss the mark scheme in detail to agree which answers can and cannot be accepted. Examiners award marks where it is clear that candidate responses have met the requirements of the mark scheme. These requirements may vary between different components or different versions of the same component, depending on the exact requirements of the question and the candidate responses seen during the standardisation process.

Sometimes, our mark schemes may allow marks to be awarded to responses which contain elements that are factually incorrect or for content not covered by the syllabus. We do this in response to the demands of a specific question to support candidates and make sure that our assessments are fair. However, these allowances should not be used as a guide for teaching and learning.

We cannot discuss the mark scheme with schools, and we recommend that schools read the mark scheme together with the assessment material and the Principal Examiner Report for Teachers.

This document consists of **13** printed pages.

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General marking principles

All examiners must apply these marking principles when marking candidate responses.

1	Examiners must award marks for each response in line with: • the specific **content** defined in the mark scheme • the specific **skills** defined in the mark scheme or in the level descriptions • the **standard of response** required as exemplified by the standardisation scripts.
2	Examiners must award **whole marks** (not half marks, or other fractions).
3	Examiners must award marks **positively**. This means that: • marks are not deducted for errors or omissions • marks are awarded for correct/valid answers as defined in the mark scheme and also for **other valid answers** which go beyond the scope of the syllabus and mark scheme referring to your team leader as appropriate • the quality of spelling, punctuation and grammar are judged **only** when the mark scheme indicates that these features are **specifically assessed** in the question. However, the meaning of all responses must be unambiguous.
4	Examiners must **consistently** apply the requirements of the mark scheme and any rules for what to do when candidates have not followed instructions correctly.
5	Examiners must use the **full range of marks** defined in the mark scheme, unless limited by the quality of the candidate responses seen.
6	Examiners must award marks according to the mark scheme and **must not** award marks with grade thresholds or grade descriptions in mind.

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Mathematics-Specific Marking Principles

1 Unless a particular method has been specified in the question, full marks may be awarded for any correct method. However, if a calculation is required then no marks will be awarded for a scale drawing.

2 Unless specified in the question, non-integer answers may be given as fractions, decimals or in standard form. Ignore superfluous zeros, provided that the degree of accuracy is not affected.

3 Allow alternative conventions for notation if used consistently throughout the paper, e.g. commas being used as decimal points.

4 Unless otherwise indicated, marks once gained cannot subsequently be lost, e.g. wrong working following a correct form of answer is ignored (isw).

5 Where a candidate has misread a number or sign in the question and used that value consistently throughout, provided that number does not alter the difficulty or the method required, award all marks earned and deduct just 1 A or B mark for the misread.

6 Recovery within working is allowed, e.g. a notation error in the working where the following line of working makes the candidate's intent clear.

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Annotations guidance for centres

Examiners use a system of annotations as a shorthand for communicating their marking decisions to one another. Examiners are trained during the standardisation process on how and when to use annotations. The purpose of annotations is to inform the standardisation and monitoring processes and guide the supervising examiners when they are checking the work of examiners within their team. The meaning of annotations and how they are used is specific to each component and is understood by all examiners who mark the component.

We publish annotations in our mark schemes to help centres understand the annotations they may see on copies of scripts. Note that there may not be a direct correlation between the number of annotations on a script and the mark awarded. Similarly, the use of an annotation may not be an indication of the quality of the response.

The annotations listed below were available to examiners marking this component in this series.

Annotations

Annotation	Meaning
	More information required
	Accuracy mark awarded zero
	Accuracy mark awarded one
	Accuracy mark awarded two
	Accuracy mark awarded three
	Independent mark awarded zero
	Independent mark awarded one
	Independent mark awarded two
	Independent mark awarded three
	Benefit of the doubt

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Annotation	Meaning
C	Communication mark
	Incorrect
FT	Follow through
Highlighter	Highlight a key point in the working
ISW	Ignore subsequent work
M0	Method mark awarded zero
M1	Method mark awarded one
M2	Method mark awarded two
M3	Method mark awarded three
MR	Misread
O	Omission
Off-page comment	Allows comments to be entered at the bottom of the RM marking window and then displayed when the associated question item is navigated to.
On-page comment	Allows comments to be entered in speech bubbles on the candidate response.
Pre	Premature rounding/approximation
SC	Special case
SEEN	Indicates that work/page has been seen
TE	Transcription error

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Annotation	Meaning
	Correct
	Correct answer from incorrect working

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MARK SCHEME NOTES

The following notes are intended to aid interpretation of mark schemes in general, but individual mark schemes may include marks awarded for specific reasons outside the scope of these notes.

Types of mark

M Method marks, awarded for a valid method applied to the problem.

A Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. For accuracy marks to be given, the associated Method mark must be earned or implied.

B Mark for a correct result or statement independent of Method marks.

When a part of a question has two or more 'method' steps, the M marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several B marks allocated. The notation 'dep' is used to indicate that a particular M or B mark is dependent on an earlier mark in the scheme.

Abbreviations

awrt	answers which round to
cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
nfww	not from wrong working
oe	or equivalent
rot	rounded or truncated
SC	Special Case
soi	seen or implied

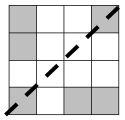
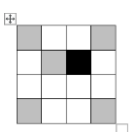
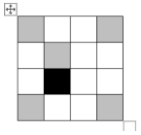
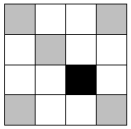
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Question	Answer	Marks	Partial Marks	Guidance
1	8.88 2.45 12.74	**3**	**B1** for 8.88 **B1FT** for 21.62 – *their* 8.88 **B1FT** for *their*12.74 ÷ 5.2	FT must be correct to 3 sf or better.
2(a)	7^6	**1**		
2(b)	302.76	**1**		Accept 303, 302.8, only if 302.76 seen in working.
3	315[.00]	**1**		
4	11.7[0]	**1**		
5	36	**3**	**M1** for 9 + 4 + 5 + 7 or 25 oe **M1** for $\frac{9}{\textit{their}25}$ [×100] oe	M1M1 implied by $\frac{9}{25}$ [×100] oe *their*25 in range 23 to 27 or from 9 + 4 + 5 + 7
6	0.443 $\frac{4}{9}$ 45% $\sqrt[3]{0.1}$	**2**	**B1** for 3 in correct order or **M1** for all decimal equivalents to enable comparison 0.46…, 0.444, 0.45, [0.443]	Accept decimal equivalents in correct order for 2 marks [0.443], 0.444, 0.45, 0.46…
7(a)	7	**1**		
7(b)	1427	**1**		
7(c)	Ruled line from (1433, 27) to (1454, 0)	**1**		Tolerance ± $\frac{1}{2}$ small square.
8(a)	–4 final answer	**1**		

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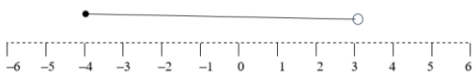
Question	Answer	Marks	Partial Marks	Guidance
8(b)	3.2 oe final answer	**2**	**M1** for $5x = 18 - 2$ oe or better or $x + \frac{2}{5} = \frac{18}{5}$ oe or better	Accept $3\frac{1}{5}$ and $\frac{16}{5}$ for 2 marks.
9(a)(i)		**1**		Clear intention and full extent of grid.
9(a)(ii)	 or 	**1**		
9(b)		**1**		
10(a)	72 135 153	**2**	**B1** for 2 correct in correct place or **M1** for $\frac{360}{40} \times k$ ($k = 1, 8, 15$ or 17)	M1 implied by 9 or one correct angle.
10(b)	Accurate pie chart	**2**	**B2FT** if *their* angles add up to 360° or **B1** for one accurate sector or **B1FT** for one accurate sector FT *their* table	Angle tolerance ± 2°. Ignore labels.
11(a)	124	**1**		Accept 122 to 126.

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Question	Answer	Marks	Partial Marks	Guidance
11(b)	114	**2**	**B1** for 7.6 or **M1** for *their*7.6 × 15 oe where 7 ⩽ *their* 7.6 ⩽ 8	Accept 111 to 117 for 2 marks . Accept 7.4 to 7.8 for B1. M1 implied by correct evaluation of *their* 7.6 × 15 if *their* 7.6 seen.
12	= < <	**2**	**B1** for 2 correct	
13(a)	10 + **(**12 – 8**)** × 5 = 30	**1**		Only one pair of brackets.
13(b)	**(**10 + 20 × 7**)** ÷ 5 = 30	**1**		Only one pair of brackets.
14	$\frac{7}{5}$ or $1\frac{2}{5}$ or 1.4	**1**		
15(a)	158	**3**	**M2** for [2 ×](3×5 + 3×8 + 8×5) oe or **M1** for [2×] 3×5 or [2×] 3×8 or [2×] 8×5	M2 implied by 79 M1 implied by 15, 24 or 40, 30, 48 or 80
15(b)	1100 or 1098 or 1098.0 to 1098.2…	**2**	**M1** for $\frac{4}{3}$ × π × 6.4^3 oe	M1 implied by 1097 to 1098.5
16(a)	(18, 40) and (28, 21) plotted	**1**		Tolerance ± $\frac{1}{2}$ small square.
16(b)	Negative	**1**		Ignore embellishments .
16(c)(i)	Acceptable ruled line of best fit	**1**		Line must pass through (16, 39) to (16, 46) **and** (24, 27) to (24, 31) **and** (32, 11) to (32, 18).
16(c)(ii)	*their* reading at 24	**1**	Strict FT *their* straight line with negative gradient	Tolerance ± 0.5.

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Question	Answer	Marks	Partial Marks	Guidance
17	6.33 or 6.332 to 6.333…	**4**	**M3** for $\sqrt{\frac{18\times32-450}{\pi}}$ oe or **M2** for $\pi r^2 = 18 \times 32 - 450$ oe or **M1** for 18×32 oe or better	Accept, for 4 marks, 6 or 6.3 only if 6.33 or 6.332 to 6.333… seen in working. M3 implied by answer in range 6.331 to 6.335 M2 implied by $\pi r^2 = 126$ M1 implied by 576 or 126
18(a)	–7	**1**		
18(b)		**2**	**B1** for correct line with one end correct or both ends correct and no/incorrect line	Clear intention but must be continuous. Accept above/on/below scale.
19	83	**3**	**M2** for any fully correct method OR **B1** for $DBC = 38$ **B1** for $ABD = 45$ OR **M1** for either DAB or $A = 90$ or DCB or $C = 90$	e.g. (180 – 90) / 2 + (180 – 90 – 52) 360 – 90 – 90 – (45 + 52) 90 / 2 + (90 – 52) 180 – (52 + 45) Angles may be marked on the diagram. Accept right angle symbol for 90.
20(a)	6 final answer	**3**	**M1** for $18 = 5x + 4 \times -3$ oe **M1FT** for a correct first step e.g. $18 + 12 = 5x$ or $x + \frac{-12}{5} = \frac{18}{5}$ oe	e.g. 18 + *their*12 = 5*x* FT from *their* $a = bx + c$ to $bx = a - c$ or $x + \frac{c}{b} = \frac{a}{b}$
20(b)	$6x(x + 2)$ final answer	**2**	**B1** for $6(x^2 + 2x)$ or $x(6x + 12)$ or $2x(3x + 6)$ or $3x(2x + 4)$ or $6x(x + 2)$ seen then spoilt	B0 for $2(3x^2 + 6x)$, $3(2x^2 + 4x)$.

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Question	Answer	Marks	Partial Marks	Guidance
21	8.94×10^8	**2**	**B1** for 894 000 000 oe	B1 e.g. 89.4×10^7 , 894×10^6
22	9790 or 9793[…..]	**3**	**B2** for 45 800 or 45 790 or 45 793[….] or **M2** for $36000 \times \left(1 + \frac{6.2}{100}\right)^4 - 36\,000$ or **M1** for $36000 \times \left(1 + \frac{6.2}{100}\right)^4$ oe	Accept for M1 if 36000 added.
23	108	**2**	**M1** for $180 - (360 \div 5)$ oe or $\frac{(5-2)\times 180}{5}$ oe	
24	49.8 nfww	**4**	**M3** for $\frac{\frac{30}{60}\times 54 + 56}{\frac{56}{48} + 0.5}$ oe OR **M1** for $\frac{56}{48}$ oe $\frac{56}{48}\times 60$ oe or better **M1** for $\frac{30}{60}\times 54$ oe or better	Mark at most accurate. $\frac{54}{30} + 48 = 49.8$ scores M0 e.g. $\frac{83}{1.666\ldots}$ oe or $\frac{83}{100}\times 60$ oe M1 implied by 1.17 or 1.166… or $\frac{7}{6}$ or $1\frac{1}{6}$ or 70 or 1[h] 10[m] or 1.67 or 1.666… or $\frac{5}{3}$ or $1\frac{2}{3}$ or 100 or 1[h] 40[m] M1 implied by 27 or 83

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Question	Answer	Marks	Partial Marks	Guidance
25(a)(i)	$4n - 1$ oe final answer	**2**	**B1** for $4n + j$ or $kn - 1$ ($k \neq 0$) , or $4n - 1$ seen then spoilt	Allow correct un-simplified form e.g. $3 + (n - 1)4$ for 2 marks or 1 mark if spoilt. Accept $n4 - 1$, $n = 4n - 1$, x for n etc. for 2 or 1 mark.
25(a)(ii)	$4n - 1 = 603$	**M1**	FT *their* **(a)(i)** Accept any correct method e.g. 604 is a multiple of 4 and this sequence is one less than the multiple of 4s or counting in 4's	FT is from $an + b$. Accept 604 for 603 + 1. e.g.s $4 \times 151 - 1 = 603$ M1 M1 $(603 + 1) / 4 = 151$ M1 M1 $(603 - 3) / 4 = 150$ M1 M0 595, 599, 603, 607 M0 M0
	$n = \frac{603+1}{4} = 151$	**M1**		
25(b)	$-5 \quad -2 \quad 3$	**2**	**B1** for 2 correct and in the correct places or if 0 scored **SC1** for $-6 \quad -5 \quad -2$	
26	21.1 or 21.09… to 21.10	**2**	**M1** for $11^2 + 18^2$ or better	Accept 20 or 21 for 2 marks if 21.1 or 21.09… to 21.10 seen in working. M1 implied by 121 + 324 or 445.
27	$[y =] 4x + 1$ oe final answer	**2**	**B1** for $4x + c$ ($c \neq 3$) oe or **M1** for $9 = 4 \times 2 + c$ oe	
28	48.2 or 48.18 to 48.19	**2**	**M1** for cos […=] $\frac{6}{9}$ oe or better or $90 - \sin^{-1}(\frac{6}{9})$ oe or better	Accept 48 or 50 for 2 marks if 48.2 or 48.18 to 48.19 seen in working. Accept alternative complete methods for M1. $\tan[\ldots=] \sqrt{(9^2 - 6^2)} / 6$ oe imp by 6.71/6 $\sin[\ldots=] \sqrt{(9^2 - 6^2)} / 9$ oe imp by 6.71/9

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