

Cambridge IGCSE™

CAMBRIDGE INTERNATIONAL MATHEMATICS**0607/41**

Paper 4 (Extended)

May/June 2026**MARK SCHEME**Maximum Mark: 75

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.

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.

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.

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

Annotation	Meaning
C	Communication mark
X	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

Annotation	Meaning
	Correct
	Correct answer from incorrect working

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

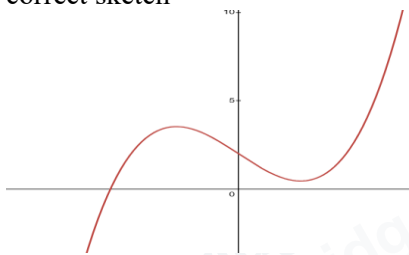
- M Method marks, awarded for a valid method applied to the problem.
- A Accuracy mark, awarded for a correct answer or intermediate step correctly obtained. For accuracy marks to be given, the associated Method mark must be earned or implied.
- B Mark for a correct result or statement independent of 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.

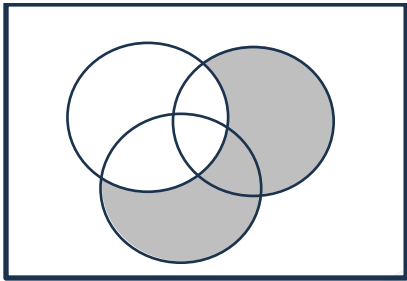
Abbreviations

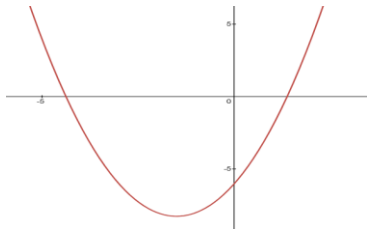
awrt	answers which round to
cao	correct answer only
dep	dependent
FT	follow through after error
isw	ignore subsequent working
nfwf	not from wrong working
oe	or equivalent
rot	rounded or truncated
SC	Special Case
soi	seen or implied

Question	Answer	Marks	Partial Marks	Guidance
1	$\frac{4}{5}$ oe final answer	1		$\frac{2176}{2720}$ wrongly cancelled scores 0
2	45, 120	2	M1 for $\frac{165}{3+8} \times k$ where $k = 1, 3$ or 8	Accept in either order M1 implied by 15, 45 or 120 nfw
3	47 000	1		Accept 4.7×10^4 but not 47×10^3
4(a)	35 [$< t \leq$] 40	1		
4(b)	42.7[0...]	2	M1 for at least 4 of 12.5, 30, 37.5, 45 and 60 soi	$187.5 + 2700 + 10500 + 12375 + 8400$ 34 162.5
5(a)	triangle at $(-4, -2)$ $(-6, -3)$ $(-6, -4)$	2	B1 for triangle reflected in $y = -1$ or for reflection in $x = k$	
5(b)	enlargement [centre] $(1, -1)$ [sf] $-\frac{1}{2}$	3	B1 for each correct	More than one transformation scores 0. Extra properties treat as choice. Accept reduction but SF must still be $-\frac{1}{2}$ Do not accept column vector rather than coordinates
5(c)	rotation [centre] $(2, -1)$ 90° [anticlockwise] oe	3	B1 for each correct	More than one transformation scores 0. Extra properties treat as choice. Do not accept column vector rather than coordinates.

Question	Answer	Marks	Partial Marks	Guidance
6(a)	correct sketch 	2	M1 for positive cubic with turning points in wrong position or B1 for correct curve with excessive feathering.	Maximum in second quadrant. Allow minimum on x -axis but not below Accept light feathering Must be curve
6(b)	-2.53 or $-2.525\dots$	1		Allow if seen clearly on graph
7(a)(i)	-5	1		
7(a)(ii)	6	3	M2 for $9x - 6 - 2 = 46$ or M1 for $3(3x - 2) - 2 = 46$ or better OR M1 for $3f(x) - 2 = 46$ or better soi by 16 M1 dep for <i>their</i> $16 = 3x - 2$ dependent on first M1	Allow x for $f(x)$ e.g. $\frac{46+2}{3}$ for M1 <i>their</i> 16 not 46
7(b)	$[\pm] \sqrt{x-1}$ final answer	2	M1 for correct first step $x = y^2 + 1$ or $y - 1 = x^2$	Square root line must be at least above the negative sign
8(a)	$-3, -13$	2	B1 for -3 or M1 for differences of 0 $[-]2$ $[-]4$ $[-]6$ seen	
8(b)	36	2	M1 for $\frac{16\ 843 + 5}{13}$	± 36 or 1296 imply M1
8(c)	$2n^3 - 1$ oe final answer	2	M1 for cubic expression or two third differences of 12 seen	Accept 'all third differences are 12'

Question	Answer	Marks	Partial Marks	Guidance
9(a)	470	3	B2 for 70 seen or M2 for $400 + \frac{400 \times 3.5 \times 5}{100}$ or M1 for $\frac{400 \times 3.5 \times 5}{100}$	
9(b)(i)	695.56 or 696	2	M1 for $600 \times \left(1 + \frac{3}{100}\right)^5$	accept 695.5 to 695.6 do not accept $(1 + 3\%)$ unless recovered.
9(b)(ii)	12 nfw	4	B3 for 11.8 or 11.78... OR M3 for $n \log \left(1 + \frac{3}{100}\right) = \log \frac{850}{600}$ oe or for good sketch indicating value between 11 and 12 or for correct trials reaching 11 and 12 or M2 for $\left(1 + \frac{3}{100}\right)^n = \frac{850}{600}$ oe or for suitable sketch or for at least 3 correct trials or M1 for $600 \times \left(1 + \frac{3}{100}\right)^n = 850$ oe soi by at least 2 correct trials	Starting with 1 year = 600 scores maximum of M2 for 3 ‘correct’ trials. Scores M1 for 2 ‘correct’ trials. For those starting from $n = 5$, 600 replaced accordingly by <i>their</i> 696 oe 6.78 for B3 , still need answer 12. Trials to 6 and 7 for M3 but still 3 trials and 2 trials for M2 and M1 . 1 618 2 636.54 3 655.64 4 675.31 5 695.56 6 716.43 7 737.92 8 760.06 9 782.86 10 806.35 11 830.54 12 855.46
10	$t = [\pm] \frac{\sqrt{9r^2 - P}}{4}$ or $[\pm] \sqrt{\frac{9r^2 - P}{16}}$ oe final answer	3	M1 for correctly isolating $16t^2$ or $-16t^2$ (must be first step) M1 for correct division M1 for correct square root maximum of 2 marks if final answer incorrect	Square root must go clearly below fraction line in second case Last two marks can be in either order and are FT.
11 (a)	$\subseteq$	1		Accept $\subset$ Not $C < B$ or $C \in B$

Question	Answer	Marks	Partial Marks	Guidance
11(b)		1		
12	$(x - a)(2y - b)$ final answer	2	M1 for $2y(x - a) - b(x - a)$ or $x(2y - b) - a(2y - b)$ oe	Accept reverse $(a - x)(b - 2y)$ Condone missing final bracket
13(a)	19	2	B1 for [UQ =] 139 or for [LQ =] 120	Allow 120 or 139 as answer for B1
13(b)	14	2	B1 for 106 seen	check graph
14	3.71 or 3.706 to 3.707	5	M3 for $(\pi \times 3^2) + (2\pi \times 3 \times 10) + (\pi \times 3^2 - x^2) + (5x^2) [= 300]$ oe or M2 for $[c](\pi \times 3^2) + (2\pi \times 3 \times 10) + kx^2 [= 300]$ where $c = 1, 2$ or 3 and $k = 4$ or 5 or M1 for two partial areas correct M1dep for $\sqrt{\frac{300 - \text{their } SA}{\text{their } k}} = x$ dependent on at least M1	$18\pi + 60\pi$ implies M1 e.g. $300 - 78\pi = 54.95\dots$ $6x^2 = 54.95\dots$ etc implies M1 M0 from $[2](\pi \times 3^2), (2\pi \times 3 \times 10),$ kx^2 (where $k = 4$ or 5), $\pi \times 3^2 - x^2$ $k = 4$ or 5
15(a)	7.5	2	M1 for $\frac{20}{32} = \frac{x}{12}$ oe	

Question	Answer	Marks	Partial Marks	Guidance
15(b)	204.8	2	M1 for $\left(\text{their } \frac{32}{20}\right)^2$ or $\left(\text{their } \frac{20}{32}\right)^2$ or $\text{their } \frac{32}{20} = \sqrt{\frac{x}{80}}$ oe or B1 for [height of T] = $\frac{512}{55} = 9.30909\dots$	
16(a)	$[p =] \frac{16}{x^3}$ oe final answer	2	M1 for $p = \frac{k}{x^3}$ oe	Use of proportional sign instead of = scores M1 $p = \frac{k}{x^3}$ and $k = 16$ scores M1 only
16(b)	$[r =] 12x^{-\frac{3}{2}}$	4	B3 for $[r =] 3 \sqrt{\frac{16}{x^3}}$ OR B2 for $r = 3\sqrt{p}$ oe or for $r = c\sqrt{p}$ and $c = 3$ oe or B1 for $r = c\sqrt{p}$ oe and M1 for $r = \text{their } c \sqrt{\text{their } \left(\frac{16}{x^3}\right)}$	Use of proportional sign throughout question instead of = scores B2 or B1 .
17	 and $x > 1.37$ $x < -4.37$	4	B1 for a correct sketch showing a negative and a positive solution. B1 for -4.37 and 1.37 seen, may be on sketch. B1 for $x < -4.37$ B1 for $x > 1.37$	Intercepts relatively correct i.e negative > positive. $1.372\dots -4.372\dots$ Condone e.g. $x \geq$ or $\leq$ Condone $-4.37 > x > 1.37$ Allow $x > 1.4$ and $x < -4.4$ to score B1

Question	Answer	Marks	Partial Marks	Guidance
18	52.1 or 52.05 to 52.07	6	M2 for $\sqrt{10^2 + 12^2 - 2 \times 10 \times 12 \cos 50}$ or M1 for $[BD^2] = 10^2 + 12^2 - 2 \times 10 \times 12 \times \cos 50$ M2 for $[\sin DBC =] \frac{12 \sin 50}{\text{their } 9.47}$ or M1 for $\frac{\sin DBC}{12} = \frac{\sin 50}{\text{their } 9.47}$ oe OR M2 for $\cos DBC = \frac{10^2 + (\text{their } 9.47)^2 - 12^2}{2 \times 10 \times \text{their } 9.47}$ or M1 for $12^2 = 10^2 + (\text{their } 9.47)^2 - 2 \times 10 \times \text{their } 9.47 \cos DBC$ M1 dep for $[ADB] = 180 - 2 \times (140 - \text{their } DBC)$ dependent on at least M1 M1	$(BD)^2 = 89.7309...$ $BD = 9.4726...$ <i>their</i> 9.47 must come from trig $\sin DBC = 0.9704...$ $DBC = 76.02... \text{ to } 76.04$ (from 4 figs) M1 stage and $DBC = 76$ imply M2 Accept sin rule or cosine rule to find angle BDC provided they go on to find DBC otherwise M0 Angle $BDC = 53.9686...$ ABD 63.96 to 63.98...