



# Cambridge IGCSE<sup>®</sup>

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**CAMBRIDGE INTERNATIONAL MATHEMATICS**

**0607/02**

Paper 2 (Extended)

**For examination from 2020**

MARK SCHEME

Maximum Mark: 40

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**Specimen**

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This document has **8** pages. Blank pages are indicated.

**Generic Marking Principles**

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

<p><b>GENERIC MARKING PRINCIPLE 1:</b></p> <p>Marks must be awarded in line with:</p> <ul style="list-style-type: none"> <li>• the specific content of the mark scheme or the generic level descriptors for the question</li> <li>• the specific skills defined in the mark scheme or in the generic level descriptors for the question</li> <li>• the standard of response required by a candidate as exemplified by the standardisation scripts.</li> </ul>
<p><b>GENERIC MARKING PRINCIPLE 2:</b></p> <p>Marks awarded are always <b>whole marks</b> (not half marks, or other fractions).</p>
<p><b>GENERIC MARKING PRINCIPLE 3:</b></p> <p>Marks must be awarded <b>positively</b>:</p> <ul style="list-style-type: none"> <li>• marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate</li> <li>• marks are awarded when candidates clearly demonstrate what they know and can do</li> <li>• marks are not deducted for errors</li> <li>• marks are not deducted for omissions</li> <li>• answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.</li> </ul>
<p><b>GENERIC MARKING PRINCIPLE 4:</b></p> <p>Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.</p>
<p><b>GENERIC MARKING PRINCIPLE 5:</b></p> <p>Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).</p>

**GENERIC MARKING PRINCIPLE 6:**

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

**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, given 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.

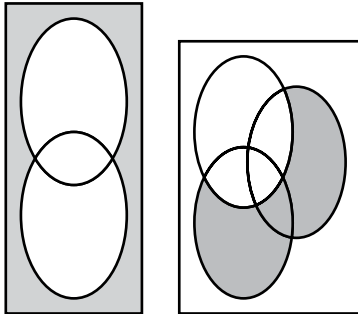
When a part of a question has two or more ‘method’ steps, the **M** marks are in principle independent unless the scheme specifically says otherwise; and similarly where there are several **B** marks allocated. The notation ‘dep’ is used to indicate that a particular **M** or **B** mark is dependent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

**Abbreviations**

<b>awrt</b>	answers which round to
<b>cao</b>	correct answer only
<b>cfs</b>	correct figures seen
<b>dep</b>	dependent
<b>FT</b>	follow through after error
<b>isw</b>	ignore subsequent working
<b>nfww</b>	not from wrong working
<b>oe</b>	or equivalent
<b>rot</b>	rounded or truncated
<b>SC</b>	special case
<b>soi</b>	seen or implied

Question	Answer	Marks	Partial Marks
1	30	1	
Question	Answer	Marks	Partial Marks
2	$5 - (2 + 3) \times 2 = -5$	1	
Question	Answer	Marks	Partial Marks
3	$\begin{pmatrix} 1 \\ -12 \end{pmatrix}$	2	<b>BI</b> for each component
Question	Answer	Marks	Partial Marks
4	$\frac{18}{25}$	1	
Question	Answer	Marks	Partial Marks
5	1	2	<b>M1</b> for $10 \times 5.5 - 9 \times 6$
Question	Answer	Marks	Partial Marks
6	3	2	<b>M1</b> for $\sqrt{(\sqrt{3})^2 + (\sqrt{6})^2}$
Question	Answer	Marks	Partial Marks
7	7 -2	2	<b>BI</b> for each If 0 scored <b>SC1</b> for correct substitution and evaluation to find the other variable
Question	Answer	Marks	Partial Marks
8	105	2	<b>M1</b> for $42 \times 2.5$ oe or <b>SC1</b> for figs 105

Question	Answer	Marks	Partial Marks
9	-3	1	
<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Partial Marks</b>
10(a)	-8	1	
10(b)	$-7n + 27$ oe	2	SC1 for $-7n + k$ or $27 + kn$ , $k \neq 0$
<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Partial Marks</b>
11	$\sqrt{v^2 - 2as}$	2	M1 for correct rearrangement for $u$ term M1 for correct square root
<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Partial Marks</b>
12	$(2a - b)(1 + x)$	2	M1 for $2a - b + x(2a - b)$ or $2a(1 + x) - b(1 + x)$
<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Partial Marks</b>
13(a)	$\frac{1}{27}$	1	
13(b)	8	1	
13(c)	$\frac{\sqrt{3}}{2}$	1	
<b>Question</b>	<b>Answer</b>	<b>Marks</b>	<b>Partial Marks</b>
14	$2x^2$	2	B1 for $kx^2$ or $2x^k$ , $k \neq 0$

Question	Answer	Marks	Partial Marks
15		2	B1 for each

Question	Answer	Marks	Partial Marks
16	$y = x - 2$ oe	3	B2 for $y = x + k$ oe or $y = kx - 2$ oe or M1 for gradient = $\frac{0 - -4}{2 - -2}$ or better or M1 for substituting coordinates of one point into <i>their</i> $y = mx + c$

Question	Answer	Marks	Partial Marks
17	$3(\sqrt{5} - 2)$ oe	2	M1 for $\times \frac{\sqrt{5} - 2}{\sqrt{5} - 2}$

Question	Answer	Marks	Partial Marks
18(a)	$y(3 - y)$	1	
18(b)	$\frac{y}{3 + y}$ final answer	2	FT <i>their</i> (a) only if $(3 - y)$ or $(3 + y)$ is cancelled B1 for $[9 - y^2 = ] (3 - y)(3 + y)$

Question	Answer	Marks	Partial Marks
19(a)	$\frac{2}{3}$	2	$\frac{2 \log 2}{3 \log 2}$ or $\log_8 4$ M1 for
19(b)	1.5 oe	1	

Question	Answer	Marks	Partial Marks
20	5	1	

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