



# Cambridge IGCSE<sup>®</sup>

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CAMBRIDGE INTERNATIONAL MATHEMATICS

0607/03

Paper 3 (Core)

For examination from 2020

MARK SCHEME

Maximum Mark: 96

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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(a)(i)	32 650	1	
1(a)(ii)	32 700	1	
1(b)	62.6	1	
1(c)	530.8416	1	
1(d)	6	1	
1(e)	9	1	
1(f)	24	1	
1(g)	208 : 234	2	<b>M1</b> for dividing by 17 <b>soi</b>
1(h)	1.6 [0]	2	<b>B1</b> for 8.4[0]

Question	Answer	Marks	Partial Marks
2(a)	$\frac{75}{100}$ oe isw	1	
2(b)	66.67	2	<b>B1</b> for correct answer to $\geq 2$ sf
2(c)	$\frac{12}{25}$	2	<b>B1</b> if correct fraction not in lowest terms
2(d)	76.8 [0]	2	<b>M1</b> for $0.8 \times 96$ oe
2(e)	927.42	3	<b>M2</b> for $800 \times \left(1 + \frac{3}{100}\right)^5$ or <b>M1</b> for $\left(1 + \frac{3}{100}\right)^k$ $k > 1$

Question	Answer	Marks	Partial Marks
3(a)	$\frac{5}{10}$ oe	1	
3(b)	$\frac{4}{10}$ oe	1	

Question	Answer	Marks	Partial Marks
3(c)	0	1	Accept $\frac{0}{10}$
3(d)	$\frac{2}{10}$ oe	1	

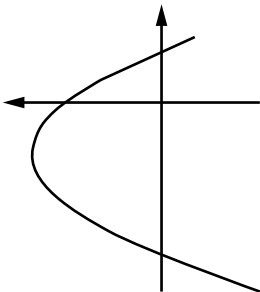
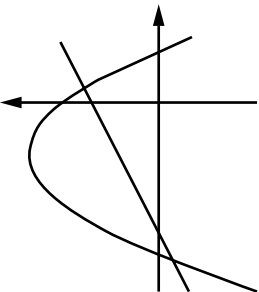
Question	Answer	Marks	Partial Marks
4(a)	40	1	
4(b)	blue	1	
4(c)(i)	brown = 9 green = 36 black = 72	2	<b>B1</b> for 1 correct angle
4(c)(ii)	3 sectors correct	2	<b>B1</b> for 1 sector correct

Question	Answer	Marks	Partial Marks
5(a)	6	1	
5(b)	24	1	
5(c)	1	1	
5(d)	12	1	

Question	Answer	Marks	Partial Marks
6(a)	600	2	<b>B1</b> for 100
6(b)	314 or 314.1 to 314.2	2	<b>M1</b> for $4 \times \pi \times 5^2$ oe
6(c)	1520 or 1523 to 1524	4	<b>M3</b> for $10^3 + \frac{4}{3} \times \pi \times 5^3$ oe or <b>M2</b> for $\frac{4}{3} \times \pi \times 5^3$ or <b>M1</b> for $10^3$
6(d)	60.9 or 60.8 to 60.96	2	<b>FT their (c)</b> If 0 scored <b>SC1 FT</b> for 6080 or 6096

Question	Answer	Marks	Partial Marks
7(a)	135	1	
7(b)	$\tan [C] = \frac{36}{12}$ 71.6 or 71.56 to 71.57	M1 A1	
7(c)	$\sqrt{36^2 + 12^2}$ or better 37.9 or 37.94 to 37.95	M1 A1	
7(d)	25.5 or 25.45 to 25.46	3	M2 for $CF = \frac{18}{\sin 45}$ or $\frac{18}{\cos 45}$ or $\sqrt{18^2 + 18^2}$ or better or M1 for $\sin 45 = \frac{18}{CF}$ or $\cos 45 = \frac{18}{CF}$ or $CG = 18$
7(e)(i)	[triangle $CFG$ is] isosceles [ $CG = 18$ ] $31 - 18 = 13$	1	M1 for $31 - 18$ oe
7(e)(ii)	173 or 173.3 to 173.5	1	dep on isosceles
7(f)	612	1	FT 110 + their (c) + their (d)
		3	M2 for $0.5 \times 12 \times 36 + 0.5 \times 18 \times 18 + 13 \times 18$ or better or M1 for $0.5 \times 12 \times 36$ or $0.5 \times 18 \times 18$ or $13 \times 18$ or better

Question	Answer	Marks	Partial Marks
8(a)	Points plotted correctly	2	B1 for 4 points correct
8(b)	Positive	1	
8(c)(i)	6.75	1	
8(c)(ii)	5	1	
8(c)(iii)	Point plotted correctly	1	FT their (c)(i) and their (c)(ii)
8(d)	Ruled line through mean within tolerance	2	B1 for any line through mean point
8(e)	5 or 6	1	FT line with positive gradient

Question	Answer	Marks	Partial Marks
9(a)		2	<b>M1</b> for correct shape <b>A1</b> for maximum in second quadrant and $x$ intercepts approximately correct
9(b)	6	1	
9(c)	-2.47 or -2.475 to -2.474 0.808 or 0.8081...	1	
9(d)	(-0.833, 8.08) or (-0.833..., 8.083...)	1	
9(e)		2	<b>B1</b> for positive gradient <b>B1</b> for correct $y$ -intercept at approximately 4
9(f)	(-2.59, -1.18) or (-2.591 to -2.590, -1.181...) (0.257, 4.51) or (0.2573..., 4.514 to 4.515)	1	
		1	

Question	Answer	Marks	Partial Marks
10(a)(i)	-2	2	<b>M1</b> for subtracting 6 or dividing by 5
10(a)(ii)	$x < 3$	2	<b>M1</b> for subtracting 3 or dividing by 6
10(b)(i)	$s^7$	1	
10(b)(ii)	$t^8$	1	
10(b)(iii)	$6r^2$	2	<b>B1</b> for $kr^2$ or $6r^k$ ( $k \neq 0$ )
10(c)	$10x - 9$ final answer	2	<b>M1</b> for $(4x - 12)$ or $(6x + 3)$
10(d)	$3y(5 - y)$ final answer	2	<b>B1</b> for $3(5y - y^2)$ or $y(15 - 3y)$

Question	Answer	Marks	Partial Marks
11(a)	18	3	<b>M2</b> for $\frac{15}{50} \times 60$ oe or <b>M1</b> for $\frac{15}{\text{their time}}$ or $\frac{50}{60}$
11(b)	75	3	<b>M2</b> for $\frac{15}{12} \times 60$ or <b>M1</b> for $\frac{15}{12}$ or $\frac{12}{60}$ or 5 min/km