Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

MATHEMATICS **0580/11**

Paper 1 (Core) **October/November 2018**

MARK SCHEME

Maximum Mark: 56

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

Cambridge International is publishing the mark schemes for the October/November 2018 series for most Cambridge IGCSE™, Cambridge International A and AS Level components and some Cambridge O Level components.

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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.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- 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
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- 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.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

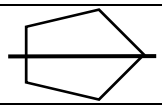
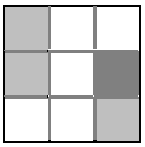
Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

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.

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Abbreviations
cao – correct answer only
dep – dependent
FT – follow through after error
isw – ignore subsequent working
oe – or equivalent
SC – Special Case
nfww – not from wrong working
soi – seen or implied

Question	Answer	Marks	Partial Marks
1	11.2 oe	**1**	
2	308	**1**	
3	a^3 cao	**1**	
4	30%, $\frac{7}{20}$, $\frac{3}{8}$, 0.38	**2**	**B1** for three in correct order or **M1** for 0.35 **and** 0.375
5(a)	3.7	**1**	
5(b)	[Regular] hexagon	**1**	
6(a)	258 000	**1**	
6(b)	[0].060 cao	**1**	
7(a)		**1**	
7(b)		**1**	
8(a)	Arrow at 0.2	**1**	
8(b)	0.8 oe	**1**	
9(a)	16	**1**	
9(b)	–11	**1**	
10	Correct ruled enlargement	**2**	**B1** for two sides correct or for enlargement incorrect scale factor
11(a)	$\begin{pmatrix}12\\-6\end{pmatrix}$	**1**	
11(b)	$\begin{pmatrix}3\\-7\end{pmatrix}$	**1**	

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Question	Answer	Marks	Partial Marks
12	21 nfww	**2**	**B1** for $\frac{x}{14}=\frac{12}{8}$ oe, or better or scale factor, i.e. 1.75 or $\frac{4}{7}$ oe seen
13	24 nfww	**2**	**M1** for 360 ÷ 15 If zero scored, **SC1** for answer of 156
14(a)	10 25	**1**	
14(b)	Graph completed correctly	**2**	**B1** for line from (10 55, 9) to (11 20, 9) **B1 FT** for line from (*their* 11 20, 9) to (*their* 11 20 + 30 min, 0)
15(a)	4.2	**1**	
15(b)	0.83 [m^2] or 8300 cm^2	**2**	**M1** for 0.4 × 1.2 + (0.9 – 0.4) × 0.7 or 0.7 × 0.9 + (1.2 – 0.7) × 0.4 or 1.2 × 0.9 – (0.9 – 0.4) × (1.2 – 0.7) or for one of the above, consistently using cm e.g. 40 × 120 + (90 – 40) × 70
16	$\frac{3}{8}\times\frac{4}{9}$ oe **or** $\frac{3}{8}\div\frac{18}{8}$ oe with common denominator	**M2**	**B1** for $\frac{9}{4}$ oe seen or **M1** for $\frac{3}{8}\times$ *their* $\frac{4}{9}$
	$\frac{1}{6}$ cao	**A1**	
17(a)	Point (28 , 30) marked	**1**	
17(b)	Ruled line of best fit	**1**	
17(c)	22 to 26	**1**	**FT** *their* ruled line of best fit with positive gradient
18	896	**3**	**M2** for $800+\frac{800\times4\times3}{100}$ oe or **M1** for $\frac{800\times4\times3}{100}$ oe
19(a)	23	**1**	
19(b)	$3n + 5$ oe	**2**	**B1** for $3n + j$ or $kn + 5$, $k \neq 0$

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Question	Answer	Marks	Partial Marks
20	900	**3**	**M2** for $\frac{150\times100\times60}{1000}$ oe or **M1** for 150 × 100 × 60 or 1.5 [× 1] × 0.6 or **B1** for figs 9
21(a)	1.87×10^8	**1**	
21(b)	7.8×10^6	**2**	**B1** for answer figs 78
22	[x =] 62	**2**	**B1** for 56 identified as angle A or **M1** for $\frac{(180-56)}{2}$
	[y =] 118	**2**	**FT** for 2 marks *their* acute x + *their* y =180 or 56 + *their* acute x = *their* y or **B1** for any of ACB, BCM or LCN = 62 or *their* acute x or **M1** for 180 – 62 or 180 – *their* acute x or 56 + 62 or 56 + *their* acute x
23(a)	$11x - 13$ final answer	**2**	**B1** for $5x - 15$ or $6x + 2$ or for answer of $11x + j$ or $kx - 13$
23(b)	Correctly eliminating one variable	**M1**	
	[x =] 3	**A1**	
	[y =] –2	**A1**	If zero scored, **SC1** for 2 values satisfying one of the original equations or for 2 correct answers with no working

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