



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

MATHEMATICS

0580/12

Paper 1 (Core)

October/November 2016

MARK SCHEME

Maximum Mark: 56

Published

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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
nfw	not from wrong working
soi	seen or implied

Question	Answer	Mark	Part marks
1 (a)	6	1	
(b)	2.5	1	
2 (a)	$\frac{9}{100}$	1	
(b)	[0].3	1	
3	< > =	2	B1 for two correct
4 (a)	Correct arrow	1	
(b)	$\frac{2}{20}$ oe or 0.1 or 10%	1	
5 (a)	$6 + 12 \div (2 \times 3) = 8$	1	
(b)	0.625 oe	1	
6 (a)	$\begin{pmatrix} 15 \\ -21 \end{pmatrix}$	1	
(b)	$\begin{pmatrix} 3 \\ -13 \end{pmatrix}$	1	
7 (a)	5	1	
(b)	6	1	
8 (a)	24 or 48 or 72 or ...	1	
(b)	53 or 59	1	
9 (a)	15 000 cao	1	
(b)	1.5×10^4	1FT	FT <i>their (a)</i>

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Question	Answer	Mark	Part marks
10	25	2	B1 for 67 or 113 seen once in correct position or M1 for $a + 42 = 67$ or $a + 42 + 113 = 180$ or better
11	21	2	M1 for $k - 8 = 13$ or $6k - 48 = 78$ or better
12	58	2	M1 for $\frac{(13+16) \times 4}{2}$ or $4 \times 13 + \frac{1}{2} \times 4 \times 3$ oe
13	7.42 or 7.418 to 7.419	2	M1 for $\sin [32^\circ] = \frac{x}{14}$ or better
14	262	3	M2 for $9 \times 6 \times 5 - 2 \times 2 \times 2$ oe or M1 for $9 \times 6 \times 5$ or $2 \times 2 \times 2$ oe
15 (a)	0.98 oe	1	
(b)	50 cao	2	M1 for 2500×0.02 If zero scored, SC1 for answer of 2450
16 (a)	(7, 1)	1	
(b)	-1.25 or $-\frac{5}{4}$ or $-1\frac{1}{4}$	2	M1 for rise/run
17 (a)	B and D	1	
(b)	5.6	2	M1 for $\frac{h}{4.2} = \frac{12.8}{9.6}$ oe or correct scale factor
18 (a)	(9, 14) identified	1	
(b)	Positive	1	
(c)	Ruled line of best fit	1	
(d)	Speaking test score	1FT	Strict FT their straight line of best fit
19 (a)	32	1	
(b)	150	3	M2 for $180 - \frac{360}{12}$ or $\frac{180 \times (12 - 2)}{12}$ or $\frac{(2 \times 12 - 4) \times 90}{12}$ or M1 for $\frac{360}{12}$ or $180 \times (12 - 2)$ or $(2 \times 12 - 4) \times 90$ soi

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Question	Answer	Mark	Part marks
20	Common denominator 24	B1	accept $k \times 24$
	Two correct from $\frac{18}{24}$, $\frac{16}{24}$ and $\frac{3}{24}$ oe	M1	accept $\frac{18k}{24k}$, $\frac{16k}{24k}$ and $\frac{3k}{24k}$
	$1\frac{7}{24}$ cao	A2	A1 for $\frac{31}{24}$ or $\frac{31k}{24k}$ or $1\frac{7k}{24k}$
21 (a)	$9p$ final answer	1	M1 for $t(10 + 15t)$ or $5(2t + 3t^2)$ B1 for one correct with working If zero scored, SC1 for 2 values satisfying one of the original equations or SC1 if no working shown, but 2 correct answers given
(b)	$4q - 12$ final answer	1	
(c)	$5t(2 + 3t)$ final answer	2	
(d)	$[x =] 3$, $[y =] -2$ with supporting working	2	