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
nfww 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** *their* **(a)**

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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 $\sin [32=] \frac{x}{14}$ 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**	
(b)	$4q - 12$ final answer	**1**	
(c)	$5t(2 + 3t)$ final answer	**2**	**M1** for $t(10 + 15t)$ or $5(2t + 3t^2)$
(d)	$[x =]\ 3$, $[y =]\ -2$ with supporting working	**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

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