Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

MATHEMATICS **0580/13**

Paper 1 (Core) **May/June 2017**

MARK SCHEME

Maximum Mark: 56

Published

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

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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	Part marks
1	374	**1**	
2(a)	radius	**1**	
2(b)	chord	**1**	
3(a)	[0].16	**1**	
3(b)	$\frac{16}{100}$ oe	**1**	
4(a)	Time correctly drawn on clock face	**1**	
4(b)	15 45	**1**	
5(a)	5400 cao	**1**	
5(b)	42.348 cao	**1**	
6	5, 3, 6, 4, 7	**2**	**B1** for 3 correct If zero scored, **SC1** for correct tally, or frequencies if frequency column incorrect
7(a)	–6	**1**	
7(b)	8, 11, 14	**1**	
8(a)	4913	**1**	
8(b)	9	**1**	
9	$4x(x-2y)$ final answer	**2**	**M1** for $4\left(x^2-2xy\right)$ or $x\left(4x-8y\right)$ or $2\left(2x^2-4xy\right)$ or $2x\,(2x-4y)$
10(a)	(0, –6)	**1**	
10(b)	4	**1**	
11(a)	8	**1**	
11(b)	–9	**1**	

Question	Answer	Marks	Part marks
11(c)	$\frac{3}{5}$ or equivalent fraction	**1**	
12(a)	10	**2**	**M1** for $5x + 6x + 7x = 180$ oe or $\frac{180}{5+6+7}$ or **B1** for angles 50, 60 and 70
12(b)	70	**1FT**	**FT** 7 × *their* ***(a)*** provided 0 < *their answer* < 180
13(a)(i)	$\begin{pmatrix} 30 \\ -20 \end{pmatrix}$	**1**	
13(a)(ii)	$\begin{pmatrix} -6 \\ 4 \end{pmatrix}$	**1**	
13(b)	– 4	**1**	
14(a)	1.4	**1**	
14(b)	3.42	**2**	**M1** for (sum of the 10 numbers) ÷ 10
15(a)	83 or 89	**1**	
15(b)	210	**2**	**M1** for 210 × *k* or for 3,7 and 2,3,5 seen or for a list of at least 4 correct multiples of both 21 and 30 or 2 × 3 × 5 × 7 as answer
16(a)	8	**1**	
16(b)	[*x* =] 0.5	**1**	
	[*y* =] 5	**1**	If zero scored, **SC1** for correct substitution and evaluation to find the other variable
17	646 or 646.1[3…]	**3**	**M2** for 600 × 1.025^3 oe or **M1** for 600 × 1.025^2 oe If zero scored, **SC2** for 46.1 or 46.1[3…]
18	common denominator 12	**B1**	accept *k* × 12 throughout
	one correct from $\frac{9}{12}$ or $\frac{8}{12}$ oe	**M1**	accept $\frac{9k}{12k}$ or $\frac{8k}{12k}$
	$\frac{5}{6}$ cao	**A2**	**A1** for $\frac{10}{12}$ or $\frac{10k}{12k}$
19(a)	2 points correctly plotted	**1**	
19(b)	positive	**1**	

Question	Answer	Marks	Part marks
19(c)	ruled line of best fit	**1**	
19(d)	80 to 92	**1**	
20(a)	8.91	**2**	**M1** for [BC^2 =] $6.3^2 + 6.3^2$ or 6.3 ÷ sin 45 or 6.3 ÷ cos 45
20(b)	13.5 or 13.48…	**2**	**M1** for sin [=] $\frac{52}{223}$
21(a)	6	**1**	
21(b)	$2x^3$ final answer	**1**	
21(c)	$15y^4$ final answer	**2**	**B1** for $15y^k$ or ky^4 as final answer ($k \neq 0$)