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Cambridge International General Certificate of Secondary Education

MARK SCHEME for the March 2016 series

0580 MATHEMATICS

0580/12 Paper 12 (Core), maximum raw mark 56

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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

Qu	Answer	Mark	Part marks
1	17 017	**1**	
2	5.04	**1**	
3	12.3	**1**	
4	93	**1**	
5	11	**1**	
6 (a)	6800	**1**	
(b)	6790	**1**	
7	$w = \frac{3y-7}{5}$ oe	**2**	**M1** for $5w+7=3y$ or $5w-3y=-7$ or $w-\frac{3y}{5}+\frac{7}{5}=0$
8 (a)	–4	**1**	
(b)	154	**1**	
9 (a)	$\frac{2}{3}$ oe	**1**	
(b)	66 cao	**1**	
10	23.85%, $\sqrt{0.057}$, 0.239, $\frac{11}{46}$	**2**	**M1** for $\sqrt{0.057} = 0.2387\ldots$ and $\frac{11}{46} = 0.2391\ldots$. or for 3 in correct order
11	x^8y^7 final answer	**2**	**B1** for answer x^8y^k or x^ky^7 $(k \neq 0)$
12 (a)	1	**1**	
(b)	cannot be written as a fraction oe	**1**	

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Qu	Answer	Mark	Part marks
13	9.1 oe	**2**	**M1** for $\frac{5.2}{PQ}=\frac{12.4}{21.7}$ oe
14 (a)	$\begin{pmatrix}-1\\5\end{pmatrix}$	**1**	
(b)	*H* marked at (–3,–3)	**1**	
15	75.1 or 75.09 to 75.10	**2**	**M1** for cos [...=] $\frac{0.9}{3.5}$
16	$y=3x-1$	**3**	**M2** for $[y=]3x+c$ **M1** for rise/run If zero scored, **SC1** for $[y=]kx-1$
17 (a)	47	**1**	
(b)	117	**2**	**M1** for $360-(115+85+97)$
18	$\frac{35(or\ 95)}{60}+\frac{39}{60}$ $2\frac{7}{30}$	**M1** **A2**	accept $\frac{35k(or\ 95k)}{60k}+\frac{39k}{60k}$ or **A1** for $\frac{67}{30}$ or $\frac{134k}{60k}$ or $1\frac{74k}{60k}$ or $2\frac{14k}{60k}$
19 (a)	35	**1**	
(b)	64	**1**	
(c)	19	**1**	
20 (a)	65	**1**	
(b)	$6n + 29$ oe	**2**	**M1** for $6n + c$ or $kn + 29$, $k\neq0$
21 (a)	$6x(3x-4)$ final answer	**2**	**M1** for $6(3x^2-4x)$ or $x(18x-24)$ or $2x(9x-12)$ or $3x(6x-8)$ or $2(9x^2-12x)$ or $3(6x^2-8x)$
(b)	$3x^2-4x$ final answer	**2**	**M1** for $3x^2-kx$ or kx^2-4x or correct answer seen and then spoilt

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Qu	Answer	Mark	Part marks
22 (a)	$2^5 \times 3^2 \times 7$ oe final answer	**3**	**B2** for product of two of 2^5 , 3^2 , 7 or **B1** for 2, 3 and 7 seen or **M1** for 2×1008 or 3×672 or 7×288 soi
(b)	2.016×10^3	**1**	
23 (a)	7	**1**	
(b)	2	**1**	
(c)	5	**2**	**M1** for correctly ordering at least first 5 or last 5 numbers from list
24 (a)	120	**2**	**M1** for $\frac{41}{123} \times [360]$ oe or $\frac{123}{41}$
(b)	25 cao	**2**	**B1** for 75

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