

## **Cambridge International Examinations**

Cambridge International General Certificate of Secondary Education

MATHEMATICS
Paper 12 (Core)
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	Marks	Part Marks
1		5	1	
2		2 squares added correctly	1	
3 (a)	)	14	1	
<b>(b)</b>	)	3000	1	
4		3600	2	<b>M1</b> for $12 \times 15 \times 20$
5		35.5	2	M1 for (34 + 38 + 10 + 87 + 45 + 28 + 19 + 23) ÷ 8
6 (a)	)	6.29×10 <sup>5</sup>	1	
<b>(b</b> )	)	[0].00821	1	
7		84.8 or 84.82 to 84.83[]	2	<b>M1</b> for $27 \times \pi$
8		$\frac{10\times20}{90-40}$	M1	
		4 nfww	A1	
9		5c(3c-1) final answer	2	<b>B1</b> for $5(3c^2 - c)$ or $c(15c - 5)$
10		9	2	M1 for $2 \times 2 \times 3 \times 3$ and $7 \times 3 \times 3$ seen or final answer 3
11 (a)	)	8	1	
(b)	)	2	1	
12		27032 cao	2	<b>M1</b> for $400 \times 1.09 \times 62$ or $62 \times 1.09 \times 400$
13		24.2 or 24.19	2	<b>M1</b> for tan [=] $\frac{6.2}{13.8}$
14 (a)	)	9	1	
<b>(b</b> )	)	Bar height 23 drawn	2	M1 for [117 –] 22 + 15 + 19 + 24 + 14 or B1 for 94 or 23 seen

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Question		Answer	Marks	Part Marks
15	(a)	-1	1	
	<b>(b)</b>	25	1	
	(c)	65	1	
16	(a)	Angle in semi-circle drawn with diameter through centre	1	
	(b)	Equilateral triangle with correct arcs.	2	M1 for clear evidence of constructed 60° angles or arcs crossing equal in length to AB or an accurate diagram with no/incorrect arcs
17		$\frac{10}{3}$ or $\frac{5}{2}$	B1	oe improper fraction
		their $\frac{10}{3} \times their \frac{2}{5}$	M1	accept $\frac{20}{6} \div \frac{15}{6}$
		$1\frac{1}{3}$ cao	A1	
18	(a)	18w + 14 final answer	2	M1 for $20w+12$ or $-2w+2$ or answer $18w+k$ or $kw+14$
	(b)	$w^{10}$	1	
19		2981.51	3	M2 for 2400 × 1.075 <sup>3</sup> oe or M1 for 2400 × 1.075 <sup>2</sup> oe If zero scored SC2 for 581.51 or SC1 for 581.512[5] or 581.513
20		9	3	<b>B1</b> for 135°. <b>M1</b> for $\frac{their 135}{360} \times 24$ oe
21	(a)	$\begin{pmatrix} 4 \\ -3 \end{pmatrix}$	1	
	(b) (i)	Point at (3, 5)	1	
	(ii)	$\begin{pmatrix} 1 \\ -3 \end{pmatrix}$	1FT	FT their $\overrightarrow{AC}$
22	(a)	2.5 or $2\frac{1}{2}$	1	
	(b)	7	2	M1 for $5x + 40 = [75]$ or $x + 8 = 75 \div 5$ or better
	(c)	5	1	

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Question	Answer	Marks	Part Marks
23 (a)	[y=]-2x+3	3	<b>B2</b> for $[y = ] - 2x + c$
			or M1 for rise/run and B1 for $[y=]kx+3$ , $k \ne 0$ or $c=3$
(b)	Ruled line $y = -2x - 1$ drawn	1	

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