## MARK SCHEME for the October/November 2012 series

## 0580 MATHEMATICS

0580/11

Paper 1 (Core), maximum raw mark 56

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2012 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.



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## Abbreviations

- cao correct answer only
- cso correct solution only
- dep dependent
- ft follow through after error
- isw ignore subsequent working
- oe or equivalent
- SC Special Case

## www without wrong working

Qu.	Answers	Mark	Part Marks
1	cao	1	
2	[0].03	1	
3	<b>(a)</b> 162	1	
	(b) obtuse	1	
4	(a) 29 000	1	
	<b>(b)</b> 60	1	
5	(a) 7	1	
	<b>(b)</b> $4.5 \text{ or } 4\frac{1}{2}$	1	
6	-16	2	<b>M1</b> for 4 × 6.5
7	8j - 3k - 8 final answer	2	<b>B1</b> for two correct terms in final answer <b>or</b> for correct answer seen then spoilt
8	16	2	<b>M1</b> for 768 ÷ 48
9	[0].852 or $\frac{23}{27}$	2	<b>B1</b> for 85.56 or $\frac{2139}{25}$
10	(a) $2.3 \times 10^5$	1	
	<b>(b)</b> [0].00048	1	
11	$\frac{\frac{17}{9}}{\frac{5}{2}} \text{ or } \frac{17}{9} \div \frac{5}{2}$	M1	$\frac{\frac{34}{18}}{\frac{45}{18}} \text{ or } \frac{34}{18} \div \frac{45}{18}$
	$\frac{17}{9} \times \frac{2}{5} = \frac{34}{45}$	M1	$\frac{34}{18} \times \frac{18}{45} = \frac{34}{45}$
12	112 or 112.3 to 112.33	3	<b>M2</b> for $\pi \times 6^2 - \pi \times 0.5^2$ or <b>M1</b> for $\pi \times 6^2$ or $\pi \times 0.5^2$ seen
13	(a) $3(3y+4)$ final answer	1	
	<b>(b)</b> $a^3 - 7a$ final answer	2	<b>B1</b> for $a^3$ or $-7a$ in final answer or for correct answer seen then spoilt
14	(a) $\frac{24}{75}$ oe	1	
	<b>(b)</b> 84	2	<b>M1</b> for $450 \times \frac{14}{75}$ or $6 \times 14$

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	1			1			
15	(a) $\frac{2}{4}$	$\frac{0}{5} \times 360 [= 160]$	1				
	<b>(b)</b> 14	14	1				
	se	e chart with at least 2 correct ctors <b>and</b> at least 2 sectors prrectly labelled.	2	<b>B1</b> for a sector of 158° to 162° or 142° to 146° or 54° to 58°			
16	(a) $\begin{pmatrix} e \\ e \end{pmatrix}$	0 3	1, 1				
	<b>(b)</b> (	$\begin{pmatrix} 7\\ -8 \end{pmatrix}$	1, 1				
17	(a) (R)		2	than dash at o	et line, on each side C) s of intersecting arc	× •	
			1	Intention to d	lraw a full correct c	ircle	
	<b>(b)</b>		1	R shaded mu	st be a closed region	n	
18	(a)	3	2	<b>M1</b> for $\frac{10}{4(-4)}$	$\frac{-2}{0}$ or better		
	(b)	[y =] 3x - 2	1 ft	their (a) $x - 2$	2		
	(c)	[y=] 3x	1 ft	• •	gh gradient from the	eir (b) or their	
19	(a) 3	.54	3	<b>M2</b> for $\sqrt{7.4}$	$4^2 - 6.5^2$ )		
					$4^2 = AD^2 + 6.5^2$ or t	better	
	<b>(b)</b> 4	4.3	2	<b>M1</b> for sin [ <i>E</i>	$BCD] = \frac{6.5}{9.3}$ or bette	er	
20	<b>(a)</b> 1	0	1				
	``	5 10	1				
		[km/h]	2	<b>M1</b> for $6 \div \frac{2}{3}$	$\frac{2}{3}$ or $6 \div 40$ or better		
		orizontal line from (15 10, 12) o (16 30, 12)	1	'their 16 30'	+ 50 minutes		
	1	ine from (16 30, 12) to (17 20, 0)	1 ft				