

**MARK SCHEME for the May/June 2012 question paper
for the guidance of teachers**

0580 MATHEMATICS

0580/13

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.

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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
- soi seen or implied

Qu.	Answers	Mark	Part Marks
1	40	1	
2	52 000	1	
3	11 109	1	
4 (a)	53	1	
(b)	64	1	
5 (a)	<	1	
(b)	=	1	
6	120	2	M1 for $\frac{750 \times 2 \times 8}{100}$ oe seen or SC1 870 as final answer
7	95	2	B1 for 85 seen or M1 $x = 180 - \text{'their angle } ADC\text{'}$, if it is clearly seen
8 (a)	$\begin{pmatrix} -1 \\ 5 \end{pmatrix}$	1	
(b)	$\begin{pmatrix} 15 \\ -20 \end{pmatrix}$	1	
9 (a)	1	1	
(b)	b^{-2}	1	accept $\frac{1}{b^2}$
10	7 cao	3	B1 for 39.5(0) or 31.5(0) or 42 M1 for (their $39.5 - 8$) $\div 4.5$ or (their $42 - 10.5$) $\div 4.5$
11 (a)	isosceles	1	
(b)	64	1	
(c)	alternate (angle)	1	accept z angle

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12	$[x =] 5, [y =] -2$	3	M1 for consistent multiply and add/subtract as appropriate. Allow computational errors. Other methods allowed. A1 for correct x or y .
13 (a)	6.4×10^{-4}	1	
(b)	1.4×10^3	2	M1 for 1400 or answer rounding to 1401 or 1.4×10^k
14 (a)	3	1	
(b)	3.5	2	M1 for at least 7 numbers in order and an attempt to find the middle number
(c)	7	1	
15 (a)	$\frac{11}{12} - \frac{4}{12}$ oe $\frac{7}{12}$ cao ww 0	2	M1 correct use of a common denominator A1
(b)	$\frac{1}{4} \times \frac{13}{11}$ oe $\frac{13}{44}$ cao ww 0	2	M1 inversion and operation change A1
16 (a)	7.2 oe	2	M1 for $5x - 15 = 21$ or $x - 3 = \frac{21}{5}$
(b)	$[x =] \frac{y+2}{3}$	2	M1 for $3x = y + 2$ or $-3x = -2 - y$
17 (a)	112	2	M1 Attempt to add 6 given and <i>their</i> 2 sides
(b)	564	2	M1 for $18 \times 34 - 12 \times 4 : (612 - 48)$ or $(18 \times 12) + (14 \times 12) + (10 \times 18)$ or $(4 \times 12) + (10 \times 4) + (34 \times 14)$
18 (a)	71	2	M1 for $7 \times 8 - 3 \times -5$ or B1 56 and -15
(b)	$3v(u + 3w)$ final answer	2	B1 for $3(uv + 3vw)$ or $v(3u + 9w)$ As final answer
19 (a)	332	2	M1 for $BCA = 28$. Or $360 - 28$ or 152 marked correctly at C or $180 + 152$
(b)	78.4	2	M1 for $AB^2 = 74^2 + 26^2$ or better
20 (a)	$[0].15$ oe	1	
(b) (i)	0.12, 0.28, 0.44 oe	2	M1 for division of 15, 35 or 55 by <i>their</i> 125 Or B1 for 1 correct
(ii)	128	2	M1 for $800 \times [0].16$