

**MARK SCHEME for the May/June 2011 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

Qu.	Answers	Mark	Part Marks
1 (a)	10 073	1	Accept 20 seen with answer 31
	(b) $13 + 20 - 2 = 31$	1	
2 (a)	32	1	
	(b) 3	1	
3	14 30 or (0) 2:30 pm	1	
	June 4 th oe	1	
4	$2y(x - 2z)$	2	B1 for $y(2x - 4z)$ or $2(xy - 2yz)$
5 (a)	<	1	
	(b) <	1	
6	$(x =) 3(y - 5)$ oe final answer	2	M1 for correct first move $y - 5 = \frac{x}{3}$ or $3y = x + 15$ M1 for their correct second move
7 (a)	0	1	
	(b) 2	1	
8 (a)	$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$	1	
	(b) Point marked at (1, -1)	1	
9 (a)	21	1	
	(b) 27	1	
10	10.7 or 10.69(.....) www	2	M1 for $\frac{AC}{12} = \cos 27$ or better
11	7.94 or 7.937(.....) www	3	M2 for $\sqrt{(12^2 - 9^2)}$ or M1 for $12^2 = x^2 + 9^2$ oe or better

12 (a)	1.646×10^7	1	
(b)	3.32×10^{-2}	2	B1 for 0.0332 seen or 3.3×10^{-2} as answer or B1 for 3.32×10^k
13 (a)	36	1	
(b)	Correct working	2	M1 for $\frac{7}{6}$ oe improper fraction M1 for $\frac{12}{21} = \frac{4}{7}$ oe or visible cancelling
14 (a)	(0).55	1	
(b)	250	2	M1 for $35\ 000 \div 140$ or SC1 for figs 25
15 (a)	67	1	
(b)	0.00304	1	
(c)	56.35	1	
16	$(x =) 5$ $(y =) -1$	3	M1 for consistent multiplication and add/subtract as appropriate. A1 for 1 correct answer.
17 (a)	Reflex	1	
(b) (i)	Drawing of a trapezium	1	Ignore labels and no arrows as long as a reasonable sketch.
(ii)	Trapezium	1	
18	127.31 cao	3	M1 for 120×1.03^2 A1 for 127.308 If M0 award SC2 for 7.31 or 247.31
19 (a)	17	1	Allow -17
(b) (i)	-5.5	2	M1 for $(-12 + -13 + -10 + 4 + 4 + -6) \text{ so } \div 6$
(ii)	-8	2	M1 for method of finding mid-value
(iii)	4	1	
20 (a)	Straight ruled line from (08 10, 200) to (08 30, 900)	1	
(b)	5	1	
(c)	1.8	4	M1 for total distance \div total time M1 for converting time to hours M1 for converting metres to km