

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

0580 MATHEMATICS

0580/11

Paper 1 (Core), maximum raw mark 56

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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	87.5	1	
2 (a)	Equilateral	1	
(b)	3	1	
3	532	2	M1 for 5(h)33(min) + 3(h)19(min)
4	495.36	2	M1 for 700 ÷ 1.4131
5	21	2	M1 for 2 × 3 – 5 × (–3) or better or B1 for 6 and –15 i.e. both terms evaluated
6	0.85b + 7.5n OR $\frac{85n + 750n}{100}$ final answer	2	B1 for 0.85b OR 7.5n seen
7 (a)	Rhombus	1	
(b)	131°	1	
8	2.25 oe	2	M1 4x = 7 + 2 OR $x - \frac{2}{4} = \frac{7}{4}$ or better
9 (a)	30	1	
(b)	18.5	1	
10	23.2	2	M1 for $\sin 53.2 = \frac{x}{29}$ implicit form or better
11 (a)	1, 3, 5, 15	1	
(b)	3p(5p + 8t) final answer	2	B1 for answer of 3(5p ² + 8pt) or p(15p + 24t) or SC1 for correct answer seen in working

12	Triangle drawn correctly with ruler and arcs	3	M1 for one side drawn to correct length and M1 for clear method of crossing arcs even if wrong scale or inaccurate
13	843.75	3	M2 for $\frac{750 \times 5 \times 2.5}{100} + 750$ oe or M1 for $\frac{750 \times 5 \times 2.5}{100}$ oe or SC2 for answer 93.75
14	$\frac{55}{30} + \frac{27}{30}$ oe or (1) $\frac{25}{30} + \frac{27}{30}$ oe $\frac{82}{30}$ oe or (1) $\frac{52}{30}$ oe $2\frac{11}{15}$ M2 must be scored	M1 M1 A1	for denominator of $30k$ for denominator of $30k$ dependent on previous M1 If M0 scored then SC1 for common denominator of $30k$ seen
15 (a)	51°	1	
(b)	90°	1	
(c)	66°	1	
16	$x = -7$ $y = 9$	3	M1 for consistent multiplication and addition/subtraction as appropriate. Allow computational errors A1 for $x = -7$ or $y = 9$
17 (a)	(-1, 2)	1	
(b)	$\begin{pmatrix} 4 \\ -5 \end{pmatrix}$	1	
(c)	(1, 5)	1	
18 (a)	330	1	
(b)	1000 or 1×10^3	2	B1 for 1000000 or 1×10^6 or 10^6 seen
(c)	46.3	1	

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19 (a)	$9p - 4q$ final answer	2	SC1 for answer of $9p \pm jq$ OR $\pm kp - 4q$ j, k are integers or for continued work after correct answer
(b)	$x = \frac{g - y}{2}$ oe	2	M1 for correct first step i.e. either $g - y = 2x$ oe OR $\frac{g}{2} = x + \frac{y}{2}$ or SC1 for answer $x = \frac{y - g}{2}$
20 (a)	Perpendicular bisector drawn with 2 pairs of <u>arcs</u> and <u>ruled</u>	2	SC1 for a ruled perpendicular without arcs or only one pair or 2 pairs of correct arcs with no line drawn
(b)	Circle drawn radius 4cm	1	
(c)	Correct region shaded	1	Dependent on SC1 in (a) and an arc, radius 4cm in (b) to enclose correct area
21 (a) (i)	18	1	
(ii)	17	2	M1 for clear attempt to find the middle number
(b)	21	1	