

**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	<b>M1</b> for $5(h)33(\text{min}) + 3(h)19(\text{min})$
4	495.36	2	<b>M1</b> for $700 \div 1.4131$
5	21	2	<b>M1</b> for $2 \times 3 - 5 \times (-3)$ or better <b>or B1</b> for 6 <b>and</b> -15 i.e. both terms evaluated
6	$0.85b + 7.5n$ <b>OR</b> $\frac{85n + 750n}{100}$ final answer	2	<b>B1</b> for $0.85b$ <b>OR</b> $7.5n$ seen
7 (a)	Rhombus	1	
(b)	$131^\circ$	1	
8	2.25 oe	2	<b>M1</b> $4x = 7 + 2$ <b>OR</b> $x - \frac{2}{4} = \frac{7}{4}$ or better
9 (a)	30	1	
(b)	18.5	1	
10	23.2	2	<b>M1</b> 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	<b>B1</b> for answer of $3(5p^2 + 8pt)$ or $p(15p + 24t)$ <b>or SC1</b> for correct answer seen in working

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

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