

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

**0581 MATHEMATICS**

**0581/11**

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(min) + 3(h)19(min)
4	495.36	2	<b>M1</b> for 700 ÷ 1.4131
5	21	2	<b>M1</b> for 2 × 3 – 5 × (–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°	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 <sup>2</sup> + 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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<b>19 (a)</b>	$9p - 4q$ final answer	<b>2</b>	<b>SC1</b> for answer of $9p \pm jq$ <b>OR</b> $\pm kp - 4q$ $j, k$ are integers <b>or</b> for continued work after correct answer
<b>(b)</b>	$x = \frac{g - y}{2}$ oe	<b>2</b>	<b>M1</b> for correct first step <b>i.e. either</b> $g - y = 2x$ oe <b>OR</b> $\frac{g}{2} = x + \frac{y}{2}$ <b>or SC1</b> for answer $x = \frac{y - g}{2}$
<b>20 (a)</b>	Perpendicular bisector drawn with 2 pairs of <u>arcs</u> <b>and</b> <u>ruled</u>	<b>2</b>	<b>SC1</b> for a ruled perpendicular without arcs or only one pair <b>or</b> 2 pairs of correct arcs with no line drawn
<b>(b)</b>	Circle drawn radius 4cm	<b>1</b>	
<b>(c)</b>	Correct region shaded	<b>1</b>	<b>Dependent on SC1</b> in (a) and an arc, radius 4cm in (b) to enclose correct area
<b>21 (a) (i)</b>	18	<b>1</b>	
<b>(ii)</b>	17	<b>2</b>	<b>M1</b> for clear attempt to find the middle number
<b>(b)</b>	21	<b>1</b>	