2009 Mathematics

Standard Grade Foundation

Finalised Marking Instructions

Special Instructions

1 The main principle in marking scripts is to give credit for the skills which have been demonstrated. Failure to have the correct method may not preclude a pupil gaining credit for the calculations involved or for the communication of the answer.

Care should be taken to ensure that the mark for any question or part question is entered in the correct column, as indicated by the horizontal line.

Where a candidate has scored zero marks for any question attempted, "0" should be shown against the answer in the appropriate column.

It is of great importance that the utmost care should be exercised in adding up the marks. Where appropriate, all summations for totals and grand totals must be carefully checked.

2 The answer to one part, correct **or incorrect** must be accepted as a basis for subsequent dependent parts of a question. Full marks in the dependent part is possible if it is of equivalent difficulty.

3 Do not penalise insignificant errors. An insignificant error is one which is significantly below the level of attainment being assessed.

eg An error in the calculation of 16 + 15 would not be penalised at Credit Level.

4 Working after a correct answer should **only** be taken into account if it provides **firm** evidence that the requirements of the question have not been met.

5 In certain cases an error will ease subsequent working. **Full** credit cannot be given for this subsequent work but **partial** credit may be given.

6 Accept answers arrived at by inspection or mentally, where it is possible for the answer to have been so obtained.

7 Do not penalise omission or misuse of units unless marks have been specifically allocated to units.

8 A wrong answer without working receives no credit unless specifically mentioned in the marking scheme.

The rubric on the outside of the Papers emphasises that working must be shown. In general markers will only be able to give credit to partial answers if working is shown. However there may be a few questions where partially correct answers unsupported by working can still be given some credit. **Any such instances will be stated in the marking scheme.**

9 Acceptable alternative methods of solution can only be given the marks specified, ie a more sophisticated method cannot be given more marks.

Note that for some questions a method will be specified.

10 In general do not penalise the same error twice in the one question.

11 Accept legitimate variations in numerical/algebraic questions.

12 Do not penalise bad form eg $\sin x^0 = 0{\cdot}5 = 30^0$.

13 A transcription error is not normally penalised except where the question has been simplified as a result.

2009 Mathematics SG − Foundation Level − Paper 1

Marking Instructions

Award marks in whole numbers only

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
1 (a)	**Ans: 2717** •[1] add 2345 and 372	•[1] 2717 **1K**
(b)	**Ans: £37·28** •[1] multiply £9·32 by 4	•[1] £37·28 **1K**
(c)	**Ans: 61** •[1] know how to find $\frac{1}{5}$ of 305 •[2] find $\frac{1}{5}$ of 305	•[1] $305 \div 5$ •[2] 61 **2K**
NOTES:		
2	**Ans: 16** •[1]•[2] find area	•[1]•[2] 16 (award 1 for 15, 15·5, 16·5, 17) **2K**
NOTES:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	**Ans: £23** •[1] round correctly	•[1] 23 **1K**

NOTES:

1. Accept £23·00

4	**Ans: £10** •[1] know how to find 33⅓% of £30 •[2] carry out calculation correctly	•[1] 30 ÷ 3 •[2] 10 **2K**

NOTES:

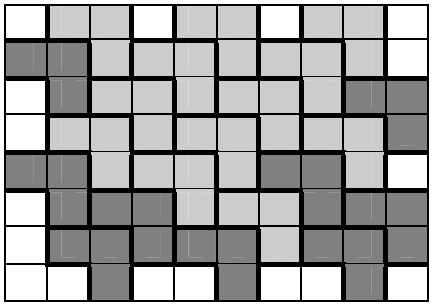
1.

Final Answers		**with working**	**without working**
£10		2/2	2/2
£15	(50%)	1/2	0/2
£7·5(0)	(25%)	1/2	0/2
£6	(20%)	1/2	0/2
£3	(10%)	1/2	0/2
£9·9(0)	(33% of £30)	1/2	0/2
£9·99	(33·3% of £30)	1/2	0/2
£9	(30% of £30)	0/2	0/2

2. Where a candidate calculates 1/3 of 30 = 10 within an incorrect strategy, award 1/2

5	**Ans: £2·31** •[1] know how to calculate VAT •[2] subtract correctly	•[1] 15·51 – 13·20 •[2] 2·31 **2K**

NOTES:

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6	**Ans:**  **Add 3 more tiles to continue pattern** •[1] interpret diagram and continue pattern •[2] continue pattern •[3] continue pattern	•[1] one tile added •[2] second tile added •[3] third tile added **3R**

NOTES:

1. Do not penalise candidates for incorrect tiles
2. Correct tiles may appear in different diagrams

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7 (a)	**Ans: 13 40** •[1] write as a 24-hour clock time	•[1] 13 40 **1K**
NOTES: 1. Do not accept 13.40 am or 13.40 pm		
(b)	**Ans: 42 minutes** •[1] know to find a time interval •[2] know how to find time spent in class •[3] carry out calculations correctly	•[1] evidence (see Note 1) •[2] evidence (see Note 2) •[3] 42 minutes **3R**
NOTES: 1. The first mark may be awarded for an **attempt** to calculate one of the following: 1·55 – 1·40, 2·08 – 1·55, 2·35 – 2·08, 2·35 – 1·40 2. The second mark may be awarded for a valid strategy, eg (2·35 – 1·40) – (2·08 – 1·55) or (1·55 – 1·40) + (2·35 – 2·08) 3. Some answers acceptable for partial marks (with or without working) From Note 1: 15, 13, 27, 55 award 1/3		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
8 (a)	**Ans:** **16 | 04 | 98** •[1] interpret date	•[1] 16 | 04 | 98 **1K**
NOTES: 1. Accept 16 | 4 | 98		
(b)	**Ans: 16ED9804** •[1] start to write down code •[2] complete code correctly	•[1] ED •[2] 16ED9804 **2R**
NOTES: 1. Where the answer to (a) is 16 | 4 | 98, for an answer of 16ED984, award 2/2		
9	**Ans: Barry, Robert, Jack** •[1] satisfy one condition •[2] satisfy two conditions •[3] satisfy three conditions	•[1] evidence •[2] evidence •[3] Barry, Robert, Jack **3R**
NOTES: 1. Possible answers (with or without working) Barry, Robert, Jack — award 3/3 Barry, Jack, Robert — award 2/3 Robert, Barry, Jack — award 2/3 Robert, Jack, Barry — award 1/3 Jack, Barry, Robert — award 1/3 Jack, Robert, Barry — award 0/3		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
10	**Ans: 0·454545** •[1] recognise pattern •[2] complete pattern	•[1] 45 •[2] 0·454545 **2R**
NOTES: 1. For an answer in the form 0·XYXYXY, where X and Y are whole numbers, $X \neq Y$ award 1/2		

KU 13 marks
RE 13 marks

[END OF PAPER 1 MARKING INSTRUCTIONS]

2009 Mathematics SG − Foundation Level – Paper 2

Marking Instructions

Award marks in whole numbers only

<table>
<tr><th>Question No</th><th>Give 1 mark for each •</th><th>Illustrations of evidence for awarding each mark</th></tr>
<tr><td>1</td><td>Ans: £20·44
•1 know how to find each share
•2 divide correctly</td><td>•1 122·64 ÷ 6
•2 20·44
2K</td></tr>
<tr><td colspan="3">NOTES:</td></tr>
<tr><td>2</td><td>Ans:
<table>
<tr><th>Drink</th><th>Size</th><th>Colour</th></tr>
<tr><td>Tea</td><td>Small</td><td>Black</td></tr>
<tr><td>Tea</td><td>Large</td><td>Black</td></tr>
<tr><td>Tea</td><td>Large</td><td>White</td></tr>
<tr><td>Coffee</td><td>Small</td><td>Black</td></tr>
<tr><td>Coffee</td><td>Small</td><td>White</td></tr>
<tr><td>Coffee</td><td>Large</td><td>Black</td></tr>
<tr><td>Coffee</td><td>Large</td><td>White</td></tr>
</table>
•1 find one possibility
•2 find more possibilities
•3 find more possibilities</td><td>•1 one other row correct
•2 another two rows correct
•3 another two rows correct
3R</td></tr>
<tr><td colspan="3">NOTES:</td></tr>
</table>

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	**Ans: 72 cubic centimetres** •[1] know how to find volume of matchbox •[2] find volume of matchbox	•[1] $6 \times 4 \times 3$ •[2] 72 **2K**
NOTES: 1. For working subsequent to a correct answer, eg correct answer $\div 2$, with working, award 1/2		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4 (a)	**Ans:**	

Number of boxes	1	2	3	4	5	6		11
Number of vases	3	5	**7**	**9**	**11**	**13**		**23**

•[1]	interpret diagram and continue pattern	•[1]	7
•[2]	continue pattern	•[2]	9, 11, 13
•[3]	know how to extend pattern	•[3] •[4]	23 (award 1 for evidence of extended pattern but with one error)
•[4]	extend pattern		

4R

NOTES:

1. Follow through errors
   3/4 can be awarded for a "correct" continuation with one error

   eg 3, 5, 8, 10, 12, 14 ……. 24
   3, 5, 8, 11, 14, 17 ……. 32
   3, 5, 6, 8, 10, 12 ……... 22
   3, 5, 8, 12, 17, 23 ……. 68
   3, 5, 9, 15, 23, 33 ……. 113

2. For an answer of 3, 5, 6, 7, 8, 9 …. 14 award 1/4 (working eased)

(b)	**Ans: × 2 + 1**		
•[1]•[2]	generalise pattern	•[1]•[2]	× 2 + 1

2R

NOTES:

1. Accept "bad form" eg boxes + boxes + 1.

2. Do not accept "it goes up in twos" or "add on 2 for each box".

3. Where an error has been made in part (a), 1/2 may be awarded for a rule which is true for **at least three** of the entries made by the candidate eg for 3, 5, 8, 10, 12, 14 ……24 in part (a) followed by $\times 2 + 2$ in part (b) award 1/2 in part (b).

4. A mark of 1/2 may **only** be awarded for the situation described in Note 3.

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5 (a)	**Ans: £240** •[1] interpret table	•[1] £240 **1K**
(b)	**Ans: Hotel Alpine, February** •[1] know how to find 1 week cost •[2] find 1 week cost •[3] interpret information	•[1] 470 ÷ 2 •[2] 235 •[3] Hotel Alpine, February **3R**
NOTES:		
6	**Ans: -27°C** •[1] write down temperature	•[1] -27°C **1K**
NOTES:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7 (a)	**Ans: 1st** •[1] interpret graph	•[1] 1st **1K**
(b)	**Ans: £1350** •[1] correctly read amounts from each year group •[2] know to add above amounts •[3] add correctly	•[1] 325, 275, 200, 250, 175, 125 •[2] 325 + 275 + 200 + 250 + 175 + 125 •[3] 1350 **3K**
NOTES:		
8	**Ans: Anne (too light) and John (too soon)** •[1] identify one person •[2] give reason •[3] identify second person •[4] give reason	•[1] Anne •[2] too light •[3] John •[4] too soon **4R**
NOTES: 1. Any reference to weight (for Anne) or time (for John) is sufficient.		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
9	**Ans: £216**	
	•[1] know how to find number of boxes	•[1] $83 \div 10$
	•[2] know how to round up	•[2] 9
	•[3] know how find cost	•[3] 9×24
	•[4] carry out all calculations correctly	•[4] 216
		4R

NOTES:

1. Final Answers (with or without working)

£192	(8×24)	award 3/4
£199·2(0)	$(8 \cdot 3 \times 24)$	award 3/4
£2160	(90×24)	award 3/4
£1920	(80×24)	award 2/4
£1992	(83×24)	award 1/4

2. For multiplication of 24 by any number other than those indicated in NOTE 1, unless the source of this number is shown, award 0/4
eg $13 \times 24 = 312$ with no other working, award 0/4

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
10 (a)	**Ans: 61%** •[1] begin strategy •[2] continue strategy •[3] carry out calculations correctly	•[1] 20 + 14 + 5 •[2] 100 – (20 +14 + 5) •[3] 61 **3K**

NOTES:

1. Common answers (with or without working)

   321 $[360-(20+14+5)]$ award 2/3
   39 (20 + 14 + 5) award 1/3

(b)	**Ans: 168** •[1] interpret pie chart •[2] know how to find sales staff •[3] find 14% of 1200	•[1] 14% •[2] $\frac{14}{100}\times 1200$ or equivalent (must be evidence of × 14 **and** ÷100) •[3] 168 **3K**

NOTES:

1. SOME COMMON ANSWERS (with or without working)

   1680 $(1200\times 14\div 10)$ award 2/3
   732 (61% of 1200) award 2/3
   240 (20% of 1200) award 2/3
   60 (5% of 1200) award 2/3

2. For an incorrect attempt to calculate 14% of 1200 where 14 has been split into 10 and 4, eg $1200 \div 10 \div 4$, award 1/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
11	**Ans: 79·5 kilograms**	
	$\bullet^1$ $\bullet^2$ know how to find mean	$\bullet^1$ $\bullet^2$ $(83 + 81 + 78 + 80 + 78 + 77) \div 6$
	$\bullet^3$ add correctly	$\bullet^3$ 477
	$\bullet^4$ divide correctly	$\bullet^4$ 79·5
		4K

NOTES:

1. SOME COMMON ANSWERS (with or without working)

   $412(\cdot 8\ldots.)$ $(83+81+78+80+78+77\div 6)$ award 3/4
   (incorrect use of calculator)

   477 award 1/4
   78 (mode) award 0/4
   79 (median) award 0/4

2. SOME COMMON ANSWERS (with working)

   $(83+81+78+80+78+77)\div 6 = 79\cdot 5 = 80$ award 4/4
   $(83+81+78+80+78+77)\div 6 = 477 \div 6 = 80$ award 3/4
   $(83+81+78+80+78+77)\div 6 = 80$ award 2/4

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
12	**Ans: 35°** $\bullet^1$ $\bullet^2$ correct strategy $\bullet^3$ carry out calculations correctly	 $\bullet^1$ $\bullet^2$ $(180 - 110) \div 2$ $\bullet^3$ 35 **3R**
NOTES: 1. For an answer of 125°, $[(360-110)\div 2]$, with or without working, award 2/3 2. For an answer of 70°, (180 – 110), with or without working, award 1/3		
13 (a)	**Ans: 3·7 (± 0·2) centimetres** $\bullet^1$ measure length	 $\bullet^1$ 3·7 (± 0·2) **1K**
(b)	**Ans: 11·1 (± 0·6) metres** $\bullet^1$ know to multiply (a) by 3 $\bullet^2$ multiply correctly by 3	 $\bullet^1$ 3·7 (± 0·2) × 3 $\bullet^2$ 11·1 (± 0·6) **2K**
NOTES: 1. For an answer of 3·7 cm in (a) followed by 11·1 m $(3\cdot7 \times 3)$ award 2/2 1110 m $(3\cdot7 \times 300)$ award 1/2 9·7 m $(3 \times 3 + 0\cdot7)$ award 1/2 370 m $(3\cdot7 \times 100)$ award 0/2 (with or without working) 2. For an answer of 4 cm in (a) followed by 12 m in (b), award 0/1 in (a) and 2/2 in (b)		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
14	**Ans: 6·25 miles** •[1] substitute into formula •[2] carry out calculation correctly	•[1] $5 \times 10 \div 8$ •[2] 6·25 miles **2K**
NOTES:		
15	**Ans: 48 centimetres** •[1] know how to find length •[2] find length	•[1] 6×8 or equivalent •[2] 48 **2K**
NOTES:		
16	**Ans: No, 184 < 200 or No, she is 16 miles short of her target** •[1] know how many days in the 3 months •[2]•[3] correct strategy •[4] correct calculations and correct conclusion with reason (reason must include a comparison or a difference)	•[1] 31, 30, 31 •[2]•[3] $31 + 30 \times 2 + 31 \times 3$ •[4] No, 184 < 200 **4R**
NOTES: 1. Minimum evidence required for award of first strategy mark: 31, 30×2, 31×3 or addition of any **two** of 31, 60, 93		

KU 27 marks
RE 27 marks

[END OF PAPER 2 MARKING INSTRUCTIONS]

FINAL TOTALS	**KU 40** **RE 40**