2007 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.

2007 Mathematics SG − Foundation Level − Paper 1

Marking Instructions

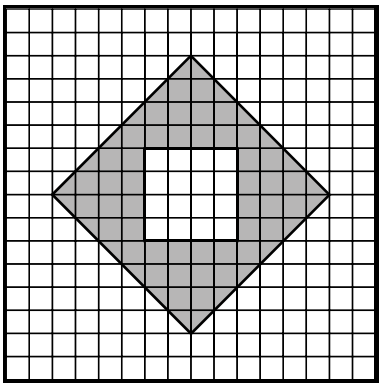
Award marks in whole numbers only

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
1 (a)	**Ans: 1837** •[1] correctly add 1375 and 462	•[1] 1837 **1K mark**
(b)	**Ans: 20·92** •[1] correctly multiply 5·23 by 4	•[1] 20·92 **1K mark**
(c)	**Ans: 15 metres** •[1] know how to find $\frac{1}{8}$ of 120 •[2] find $\frac{1}{8}$ of 120	•[1] 120 ÷ 8 •[2] 15 **2K marks**
NOTES: 1. For an answer of 7.5 ($\frac{1}{2}$ of 120 = 60, $\frac{1}{2}$ of 60 = 30, $\frac{1}{2}$ of 30 = 15, $\frac{1}{2}$ of 15 = 7·5), with working, award 1/2		
2	**Ans: £30** •[1] know how to find 20% of £150 •[2] find 20% of £150	•[1] 150 ÷ 5 or equivalent •[2] 30 **2K marks**

NOTES:

1.

Final Answers		**with working**	**without working**
£30		2/2	2/2
£120	(150 − 30)	2/2	2/2
£75	(150 ÷ 2)	1/2	0/2
£50	(150 ÷ 3)	1/2	0/2
£37·5(0)	(150 ÷ 4)	1/2	0/2
£15	(150 ÷ 10)	1/2	0/2

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	**Ans:**  •[1] start to enlarge outer square •[2] complete enlargement of outer square •[3] correctly enlarge inner square •[4] correctly centre <u>enlarged</u> inner square	•[1] 2 sides correct •[2] evidence •[3] evidence •[4] evidence (see note 2) **4R marks**

NOTES:

1. The outer square may be positioned anywhere within the grid
2. 4th mark can only be awarded when the outer shape is a square or a rhombus

4 (a)	**Ans: Cylinder indicated** •[1] tick cylinder	•[1] evidence **1R mark**
(b)	**Ans: Cylinder** •[1] state mathematical name of shape indicated	•[1] cylinder **1K mark**

NOTES:

1. If the sphere is ticked in part (a), for an answer of circle in part (b) award 0/1

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5	**Ans: 7 litres** •[1] know how to calculate number of litres •[2] find correct numbers of litres	•[1] 140 ÷ 20 •[2] 7 **2K marks**
NOTES:		
6	**Ans: 10 minutes** •[1] know to change 135 minutes to hours and minutes •[2] know to add 135 minutes to 7·50 •[3] know to subtract (7·50 + 2h15m) from 10·15 •[4] carry out all calculations correctly	•[1] 135 ÷ 60 •[2] 7·50 + 2h15m •[3] 10·15 – 10·05 •[4] 10 minutes **4R marks**
	ALTERNATIVE METHOD FOR 2nd AND 3rd MARKS •[2] know to find time interval •[3] know to subtract 2h15m from above interval	•[2] 10·15 – 7·50 •[3] 2h25m − 2h15m
NOTES: 1. **Final Answers (with or without working)** 10·05 award 2/4 2h15m award 1/4 2h25m award 1/4 2. Where a candidate treats 135 min as 1h35m leading to an answer of 50 min (10·15 − 9·25), with working award 2/4		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7 (a)	**Ans: 8·4 (± 0·2) centimetres** •[1] correctly measure distance	•[1] 8·4 (± 0·2) **1K mark**
(b)	**Ans: 840 (± 20) metres** •[1] know to multiply (a) by 100 •[2] multiply correctly	•[1] 8·4(± 0·2)× 100 •[2] 840 (± 20) **2K marks**

NOTES:

1. The second mark is not available if the answer to (a) is a whole number
2. For an answer of 0·084 (± 0·002) m (8·4 ÷ 100) award 1/2
3. For answers of 800·4 or 804, with or without working award 1/2

(c)	**Ans: No, with reason**	
	•[1] know that 1 kilometre = 1 000 metres	•[1] evidence
	•[2] comparison strategy	•[2] 7·5 (± 0·2) cm = 750 (± 20) m or 7·5 (± 0·2) cm = 0·75 (± 0·02) km or 7·5 cm <u>and</u> 1 km = 10 cm
	•[3] correct response with reason	•[3] No, 750 < 1000 or No, 0·75 < 1 or No, 7·5 < 10 **3R marks**

NOTES:

1. The reason must include a numerical comparison or a difference
2. For an answer of "No, 750 m < 1 km" award 1/3, unless 1 km = 1000 m is clearly stated

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
8	**Ans: 210º** •[1] state correct bearing	•[1] 210º **1K mark**
NOTES:		

KU 13 marks
RE 12 marks

[END OF PAPER 1 MARKING INSTRUCTIONS]

2007 Mathematics SG − Foundation Level – Paper 2

Marking Instructions

Award marks in whole numbers only

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
1	**Ans: 116º** •[1] know to subtract 2×32 from 180 •[2] carry out calculations correctly	•[1] 180 – 64 •[2] 116 **2K marks**
NOTES: 1. For an answer of 296 (360 − 2 × 32), with or without working award 1/2 2. For an answer of 148 (180 − 32), with or without working award 1/2		
2	**Ans:** **Black Hatchback Petrol** **Black Saloon Petrol** **Black Saloon Diesel** **Red Hatchback Petrol** **Red Hatchback Diesel** **Red Saloon Petrol** **Red Saloon Diesel** •[1] find some possibilities •[2] find more possibilities •[3] find another possibility	•[1] two correct rows •[2] a further two correct rows •[3] a fifth correct row **3R marks**
NOTES:		
3	**Ans: Ben Logan** •[1] state winner	•[1] Ben Logan **1K mark**
NOTES:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4 (a)	**Ans: 10·55** •[1] state arrival time	•[1] 10·55 **1K mark**
(b)	**Ans: 47 minutes** •[1] state departure time •[2] know how to calculate journey time •[3] carry out time calculation correctly	•[1] 11·08 •[2] 11·55 − 11·08 •[3] 47 **3R marks**
NOTES:		
5 (a)	**Ans: Picnic Area** •[1] read coordinates correctly	•[1] picnic area **1K mark**
NOTES: 1. CONSISTENT REVERSAL OF COORDINATES. Where the answer to (a) is Bus Station, award full marks in (b) and (c) for answers of (2, 3) and (4, 1) plotted		
(b)	**Ans: (3,2)** •[1] state coordinates correctly	•[1] (3,2) **1K mark**
(c)	**Ans: (1,4) plotted correctly** •[1] plot (1,4) correctly	•[1] evidence **1K mark**
(d)	**Ans: South-West** •[1] state correct direction	•[1] south-west **1K mark**

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6 (a)	**Ans:** Number of tables: 1 2 3 4 5 6 … 13 Number of chairs: 4 6 8 10 12 14 … 28 •[1] interpret diagram and continue pattern •[2] continue pattern •[3] know how to extend pattern •[4] extend pattern	•[1] 8 •[2] 10, 12, 14 •[3]•[4] 28 (award 1 for evidence of extended pattern but with 1 error) **4R marks**

NOTES:

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

eg 4, 6, 9, 11, 13, 15 ..... 29 award 3/4
4, 6, 9, 12, 15, 18 ..... 39 award 3/4
4, 6, 7, 9, 11, 13 ..... 27 award 3/4
4, 6, 9, 13, 18, 24 ..... 94 award 3/4
4, 6, 10, 16, 24, 34 ..... 160 award 3/4

2. For an answer of 4, 6, 7, 8, 9, 10…17 award 1/4 (working eased)

(b)	**Ans: ×2 + 2** •[1]•[2] generalise pattern	•[1]•[2] ×2 + 2 or equivalent **2R marks**

NOTES:

1. Accept "bad form" eg tables + tables + 2

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

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 4, 6, 9, 11, 13, 15 .....29 in part (a) followed by × 2 + 3 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
7 (a)	**Ans: £228** •[1] correctly calculate gross pay	•[1] £228
(b)	**Ans: £52·5(0)** •[1] correctly calculate total deductions	•[1] £52·5(0)
(c)	**Ans: £175·5(0)** •[1] correctly calculate net pay	•[1] £175·5(0) **3K marks**
NOTES: 1. Do not penalise inappropriate positioning of £228 in relation to the decimal point in box A if subsequently used as £228 2. Accept answers in working space 3. For answers of A 228 B 175·50 C 52·50 award 2/3		
8 (a)	**Ans: £0** •[1] correctly interpret table	•[1] 0 **1K mark**
(b)	**Ans: £960** •[1] correctly interpret table •[2] know how to calculate percentage •[3] carry out calculations correctly	•[1] 6% of £16 000 •[2] $\frac{6}{100} \times 16\,000$ (must be evidence of $\times 6$ **and** $\div 100$) •[3] 960 **3K marks**
NOTES: 1. For an answer of 6% of sales award 0/3 2. The first mark may be awarded for any link between 6 and 16 000 (eg 16 000 ÷ 6)		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
9 (a)	**Ans: 74 kilograms** •[1] correctly interpret graph	•[1] 74 **1K mark**
(b)	**Ans: 25th February** •[1] correctly interpret graph	•[1] 25th February **1K mark**
NOTES: 1. For an answer of 25th		award 0/1
(c)	**Ans: £150** •[1] read off weight on 22nd April •[2] know how to calculate weight loss •[3] know how to calculate money raised •[4] carry out all calculations correctly (subtraction and multiplication)	•[1] 69 •[2] 74 – 69 •[3] $(74 - 69) \times 30$ •[4] 150 **4R marks**
NOTES:		
10	**Ans: 16** •[1] state mode	•[1] 16 **1K mark**
NOTES:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
11 (a)	**Ans: £4·30** •[1] correctly interpret table	•[1] 4·30 **1K mark**
(b)	**Ans: £7·5(0)** •[1] know to multiply 3·25 by 10 •[2] know to subtract 25 •[3] all calculations correct (multiply and subtract)	•[1] 3·25 × 10 •[2] 3·25 × 10 − 25 •[3] 7·5(0) **3R marks**

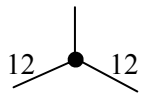
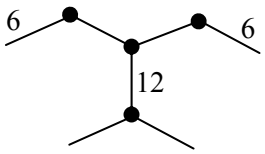
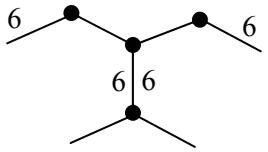
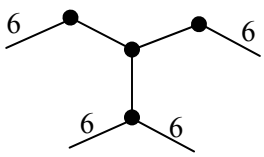
NOTES:

1. SOME COMMON ANSWERS

   Final Answer (with or without working)

£7	(3·20 × 10 − 25)	award 2/3
£21·50	(4·65 × 10 − 25)	award 2/3
£18	(4·30 × 10 − 25)	award 2/3
£16·50	(4·15 × 10 − 25)	award 2/3
£32·50	(3·25 × 10)	award 1/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
12 (a)	**Ans: 6 300 square centimetres** •[1] know how to find area of rectangle •[2] correctly calculate area of rectangle	•[1] 126×50 •[2] 6 300 **2K marks**
NOTES: 1. For working subsequent to a correct answer, eg correct answer ÷ 2, with working, award 1/2		
(b)	**Ans: 12 wooden strips** •[1] know how to find number of wooden strips •[2] correctly calculate number of wooden strips	•[1] $126 \div 10{\cdot}5$ •[2] 12 **2K marks**
NOTES:		
13	**Ans: 4 years** •[1]•[2] correct strategy to find age •[3] carry out calculations correctly	•[1]•[2] $(100 - 80) \div 5$ (or equivalent) (award 1 for $100 - 80$, $100 \div 5$ or $80 \div 5$) •[3] 4 **3R marks**
NOTES: 1. SOME COMMON ANSWERS Final Answer (with or without working) 84 $(100 - 80 \div 5)$ award 2/3 20 $(100 - 80$ or $100 \div 5)$ award 1/3 16 $(80 \div 5)$ award 1/3 580 $(5 \times 100 + 80)$ award 0/3 2. TRIAL AND ERROR For at least two attempts (eg $5 \times 2 + 80$, $5 \times 12 + 80$) award 1/3		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
14	**Ans: 72°F** $\bullet^1\bullet^2$ correctly state temperature	$\bullet^1\bullet^2$ 72 **2K marks**
NOTES: 1. For 63, 66, 70, 75, 76 or 78 (steps of 1, 2 or 5), award 1/2		
15	**Ans: S-3, T-9, U-9, V-3** $\bullet^1$ separate at first junction $\bullet^2$ complete next three junctions $\bullet^3$ complete process	$\bullet^1$  $\bullet^2$  **or**  **or**  $\bullet^3$ 3, 9, 9, 3 **3R marks**
NOTES: 1. For a final answer of 3, 9, 9, 3 award 3/3		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
16 (a)	**Ans: 42 000 cubic centimetres** •[1] know how to find volume of cuboid •[2] correctly calculate volume of cuboid	•[1] $40 \times 30 \times 35$ •[2] 42 000 **2K marks**

NOTES:

1. For working subsequent to a correct answer, eg correct answer ÷ 2, with working, award 1/2

(b)	**Ans: 420 centimetres** •[1]•[2] correct strategy to find length of cord •[3] carry out calculations correctly (must involve a multiplication and an addition)	•[1]•[2] (40 + 30 + 35) × 4 (or equivalent) •[3] 420 **3R marks**

NOTES:

1. Some common answers (with or without working)

315	((40 + 30 + 35) × 3)	award 2/3
210	((40 + 30 + 35) × 2)	award 2/3

2. Some common answers (with or without working)

105	or	40 + 30 + 35	award 1/3
160	or	40 × 4	award 1/3
120	or	30 × 4	award 1/3
140	or	35 × 4	award 1/3

3. If answers are reversed, ie (a) 420 (b) 42 000, with or without working — award 0/2 for (a), award 2/3 for (b)

KU 27 marks
RE 28 marks

[END OF PAPER 2 MARKING INSTRUCTIONS]

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