SCOTTISH QUALIFICATIONS AUTHORITY

2004 Mathematics SG Foundation
Paper 1 & Paper 2
Finalised Marking Instructions

Strictly Confidential

These instructions are **strictly confidential** and, in common with the scripts entrusted to you for marking, they must never form the subject of remark of any kind, except to Scottish Qualifications Authority staff. Similarly, the contents of these instructions must not be copied, lent or divulged in any way now, or at any future time, to any other persons or body.

Marking

The utmost care must be taken when entering and totalling marks. Where appropriate, all summations for totals must be carefully checked and confirmed.

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

Recording of Marks

Where papers assess more than one element, care must be taken to ensure that marks are entered in the correct column.

The **Total** mark for each paper or element should be entered (in red ink) in the box provided in the top-right corner of the front cover of the answer book (or question/answer book).

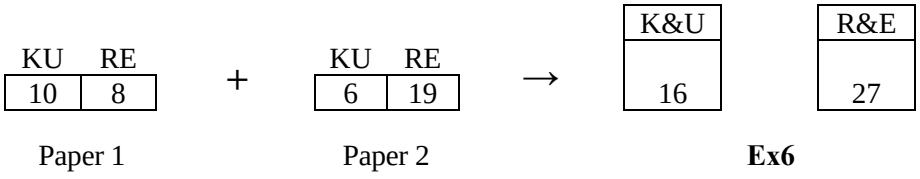
Always enter the **Total** mark as a **whole number**, where necessary by the process of rounding up.

The transcription of marks, within booklets and on to the Mark Sheet, should always be checked.

Form Ex6

- Add together KU totals from Paper 1 and 2
- Enter this final total in K & U column on Form Ex6
- Do the same for RE

Example:



Markers are reminded that they must not write comments, words or acronyms on scripts. Please use ticks, crosses, lines or numbers.

7 May 2004

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.

2004 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: 634** $\bullet^1$ correctly add 402, 159 and 73	$\bullet^1$ 634 1K mark
(b)	**Ans: 3 · 3** $\bullet^1$ correctly subtract $5 \cdot 8$ from $9 \cdot 1$	$\bullet^1$ $3 \cdot 3$ 1K mark
(c)	**Ans: 12** $\bullet^1$ $\bullet^2$ find one ninth of 108 (award 1 for attempting to divide 108 by 9)	$\bullet^1$ $108 \div 9$ $\bullet^2$ 12 2K marks
2	**Ans: £8 · 50** $\bullet^1$ know how to find 50% of 17 $\bullet^2$ carry out calculation correctly	$\bullet^1$ $17 \div 2$ or equivalent $\bullet^2$ $8 \cdot 5(0)$ 2K marks

Notes:

1. 8*r*1, 8 · 1 (no working necessary) award 1/2

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	**Ans: £ 25 · 92** •[1] know how to find pay •[2] find pay	•[1] $4 \cdot 32 \times 6$ •[2] $25 \cdot 92$ 2K marks
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4	**Ans: 250** •[1] know that 1 litre = 1000 ml •[2] know to divide by 4 •[3] divide correctly	•[1] 1000 •[2] $1000 \div 4$ •[3] 250 3K marks

Notes:

1. $2500(10000 \div 4)$, $25(100 \div 4)$, $2 \cdot 5(10 \div 4)$ (no working necessary) award 2/3

2. $4000(1000 \times 4)$ (no working necessary) award 1/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5 (a)	**Ans: 10** •[1] find issue number	•[1] 10 1K mark
(b)	**Ans: April 2005** •[1] correct year •[2] correct month	•[1] 2005 •[2] April 2R marks
Notes: If part (a) incorrect, full marks still available for part (b)		
6	**Ans: £910** •[1] correct method •[2] obtain correct answer	•[1] eg experiment (try two cases) •[2] 910 2R marks
Notes: 1. 40 $\left[\frac{1}{2}(950-870)\right]$ (no working necessary) award 1/2		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7	**Ans: 14** •[1] know that car + cycle = $\frac{1}{4}$ of 80 •[2] know that car = $\frac{1}{4}$ of $80 - 6$ •[3] carry out calculations correctly (must involve ÷ and –)	•[1] car + cycle = $\frac{1}{4}$ of 80 •[2] car = $\frac{1}{4}$ of $80 - 6$ •[3] 14 3R marks

Notes:

1. 20 $\left[\frac{1}{4}\text{ of } 80\right]$ (no working necessary) award 1/3

2. (a) $\frac{1}{4}$ of $100 - 6 = 19$
   (b) $\frac{1}{4}$ of $360 - 6 = 84$
   } (working must be shown) award 2/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
8 (a)	**Ans: £47** $\bullet^1$ know to multiply 4 by 3 $\bullet^2$ know to add 35 $\bullet^3$ multiply and add correctly	 $\bullet^1$ 4×3 $\bullet^2$ $(4 \times 3) + 35$ $\bullet^3$ 47 3K marks
Notes:		
8 (b)	**Ans: B It costs £35** **A costs £36** $\bullet^1$ know how to find the cost of car park A $\bullet^2$ multiply correctly $\bullet^3$ find cost of car park B $\bullet^4$ state conclusion and valid reason	 $\bullet^1$ 6×6 $\bullet^2$ 36 $\bullet^3$ 35 $\bullet^4$ B It costs £35 A costs £36 4R marks
Notes: 1. For 4th mark a numerical comparison must be made eg B is cheaper by £1 2. (a) B is £1 cheaper (no other working) award 4/4 (b) B (no other working) award 0/4		

KU 15 marks
RE 11 marks

[END OF PAPER 1 MARKING INSTRUCTIONS]

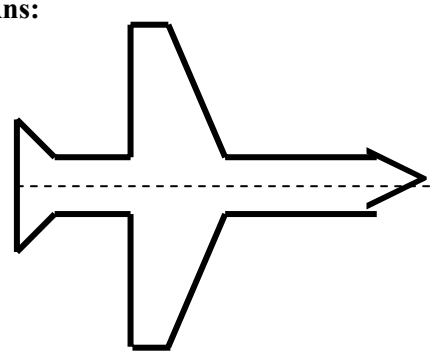
2004 Mathematics SG - Foundation Level - Paper 2

Marking Instructions

Award marks in whole numbers only

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
1	**Ans: 100** •[1] know how to find shaded angle •[2] carry out calculations correctly	•[1] $360 - 150 - 110$ •[2] 100 2K marks
Notes:		
2	**Ans:** H H H H T H T H H H T T T H T T T H T T T •[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:	H H T 20 5 1 20 1 5 5 20 1 5 1 20 1 20 5 1 5 20 award 2/3 for 5 'correct' answers award 1/3 for 3 'correct' answers	

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3 (a)	**Ans: $5 \cdot 5$ cm** $\bullet^1$ measure length	$\bullet^1$ $5 \cdot 5(\pm 0 \cdot 2)$ 1K mark
Notes: **1.** If no answer to 3(a) but 3(b) correct award 1/1		
(b)	**Ans:** $82 \cdot 5$ $\bullet^1$ know to multiply (a) $\times 15$ $\bullet^2$ multiply correctly	$\bullet^1$ $5 \cdot 5 \times 15$ $\bullet^2$ $82 \cdot 5$ 2K marks
Notes: **1.** $79 \cdot 5(5 \cdot 3 \times 15)$ $81(5 \cdot 4 \times 15)$ $84(5 \cdot 6 \times 15)$ $85 \cdot 5(5 \cdot 7 \times 15)$ } (no working necessary) award 2/2		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4 (a)	**Ans:**  •[1] reflect lines •[2] reflect lines •[3] reflect lines •[4] reflect shape	•[1] reflect 2 lines correctly •[2] reflect a further 2 lines correctly •[3] reflect a further 2 lines correctly •[4] complete reflection 4R mark
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5 (a)	**Ans:** **Age (Years) / Tally / Frequency** 18 / III / 3 19 / ~~IIII~~ / 5 20 / I / 1 21 / II / 2 22 / / 0 23 / I / 1 •[1] communicate information in tabular form •[2] communicate information in tabular form •[3] communicate information in tabular form	•[1] two frequencies correct •[2] another two frequencies correct •[3] another two frequencies correct 3K marks
Notes: 1. Do not penalise omission of "0" from frequency column. 2. Allow one error in converting tallies to frequencies. 3. If frequency column blank and <u>frequencies</u> given in tally column then apply marking instructions. 4. If frequency column is blank or entries show misunderstanding of frequency but (a) all tallies correct award 2/3 (b) 4 or 5 tallies correct award 1/3		
(b)	**Ans: 19** •[1] identify mode	•[1] 19 1K mark
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6	**Ans: 9000 cm^2** $\bullet^1\ \bullet^2$ correct method (award 1 for evidence of length $= 50 + 20 + 50$ OR 50×75 OR 20×75) $\bullet^3$ calculate $(50 + 20 + 50) \times 75$ correctly	$\bullet^1\ \bullet^2$ $(50 + 20 + 50) \times 75$ $\bullet^3$ 9000 3R marks

Notes:

1. Perimeter

   390 $(120 + 120 + 75 + 75)$ (no working necessary) award 1/3

2. $\frac{1}{2}(50 + 20 + 50) \times 75 = 4500$ (working must be shown) award 2/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7	**Ans: 4m 10s** $\bullet^1$ know how to find total time $\bullet^2$ find total time $\bullet^3$ convert to minutes and seconds	 $\bullet^1$ 10×25 $\bullet^2$ 250 $\bullet^3$ 4m 10s 3K marks

Notes:

1. 2m 50s
   4m 17s, 4m 16s $(250 \div 60)$ } (no working necessary) award 2/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
8 (a)	**Ans:** Posts: 2 | 3 | 4 | 5 | 6 | 7 | ▨ | 11 Length: 2 | 4 | 6 | 8 | 10 | 12 | ▨ | 20 $\bullet^1$ interpret diagram and continue pattern $\bullet^2$ continue pattern $\bullet^3$ know how to extend pattern $\bullet^4$ extend pattern	$\bullet^1\bullet^2$ 6, 8, 10, 12 (award 1 for any two correct) $\bullet^3\bullet^4$ 20 (award 1 for evidence of extended pattern but with one error) 4R marks

Notes:

1. "Correct" extension of pattern involving

   (a) 2-step rule eg 2, 4, 8, 12, 16, 20, ……..36 (ie $L = 4p - 8$ for $p \geq 4$) award 2/4

   (b) 1-step rule eg 2, 4, 8, 10, 12, 14, ……..22 (ie $L = 2p$ for $p \geq 4$) award 1/4

(b)	**Ans:** $\times$ **2** – **2** $\bullet^1\bullet^2$ generalise pattern	$\bullet^1\bullet^2$ $\times 2 - 2$ or (-1×2) or equivalent 2R marks

Notes:

1. Accept "bad form" eg post + post –2
2. Do not accept eg "It goes up in twos" or "Add on two for each post"

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
9 (a)	**Ans: 54cm** •[1] know to multiply 36 by $1\frac{1}{2}$ •[2] know how to multiply by $1\frac{1}{2}$ •[3] carry out calculation correctly	•[1] $36\times1\frac{1}{2}$ •[2] $36\times1\cdot5$ or $36+\frac{1}{2}$ of 36 •[3] 54 3K marks

Notes:

1. 54 — without working — award 0/3

2. (a) $40\cdot5\left(27\times1\frac{1}{2}\right)$ } (no working necessary) award 2/3
   (b) $90\left(36\times2\frac{1}{2}\right)$ }
   (c) $67\cdot5\left(27\times2\frac{1}{2}\right)$ (no working necessary) award 1/3

3. Disregard subsequent calculations after length has been found eg area

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
(b)	**Ans: 9cm**	
	$\bullet^1$ know how to find scale factor	$\bullet^1$ $\frac{12}{36}$ or $\frac{36}{12}$ or $\frac{27}{36}$ or $\frac{36}{27}$
	$\bullet^2$ know how to use scale factor to find length	$\bullet^2$ $27\times\frac{12}{36}$ or $27\div\frac{36}{12}$ or $12\times\frac{27}{36}$ or $12\div\frac{36}{27}$
	$\bullet^3$ carry out calculation correctly	$\bullet^3$ 9
		3R marks

Notes:

1. 9 without working — award 0/3

2.

	Answer	with working	without working
(a)	$8\cdot91(0\cdot33\times27)$	award 2/3	award 2/3
(b)	$8\cdot1\left(\frac{12}{36}\rightarrow0\cdot3\times27\right)$	award 2/3	award 1/3
(c)	$16\left[36\div\frac{27}{12}\text{ or }36\times\frac{12}{27}\right]$	award 1/3	award 0/3
(d)	$18(27\div1\cdot5)$	award 1/3	award 0/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
10 (a)	**Ans: 'Alan' in box C6** $\bullet^1$ plot correctly	$\bullet^1$ 'Alan' written in box C6 1K mark
Notes: 1. Accept any clear indication of C6 alone.		
(b)	**Ans: £10** $\bullet^1$ know how to find number of boxes $\bullet^2$ know how to find takings $\bullet^3$ find takings $\bullet^4$ subtract 8 correctly	$\bullet^1$ 9×10 $\bullet^2$ boxes $\times 20$ $\bullet^3$ (£) 18 $\bullet^4$ (£) 10 4R marks
Notes: 1. Answers acceptable for partial credit (no working necessary) (a) $8 \cdot 2(0)$ $(9 \times 9 \times 20\text{p} - £8)$ award 3/4 (b) $16 \cdot 2(0)$ $(9 \times 9 \times 20\text{p})$ award 2/4 (c) $-6 \cdot 6(0)$ or $6 \cdot 6(0)$ loss $(7 \times 20\text{p} - £8)$ award 2/4 (d) $6 \cdot 6(0)$ $(£8 - 7 \times 20\text{p})$ award 1/4 (e) $1 \cdot 4(0)$ $(7 \times 20\text{p})$ award 1/4		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
11 (a)	**Ans: 14 700 cm^3** $\bullet^1$ know to multiply $35 \times 28 \times 15$ $\bullet^2$ multiply $35 \times 28 \times 15$ correctly	$\bullet^1$ $35 \times 28 \times 15$ $\bullet^2$ 14 700 2K marks
(b)	**Ans: $3 \cdot 5$ cm** $\bullet^1\bullet^2$ correct method $\bullet^3$ carry out two divisions correctly	$\bullet^1\bullet^2$ $35 \div 5 \div 2$ or $28 \div 4 \div 2$ (award 1 for $35 \div 5$ or $28 \div 4$) $\bullet^3$ $3 \cdot 5$ 3K marks
Notes:		
(c)	**Ans: 60** $\bullet^1$ know how to find number of layers $\bullet^2$ know how to find number of tins $\bullet^3$ carry out calculations correctly	$\bullet^1$ $15 \div 5$ $\bullet^2$ layers x 20 $\bullet^3$ 60 3R marks
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
12	**Ans: £148 350**	
	$\bullet^1\bullet^2$ calculate percentage correctly (award 1 for evidence of correct method)	$\bullet^1\bullet^2$ 19 350
	$\bullet^3$ add correctly to find price	$\bullet^3$ 148 350
		3K marks

Notes:

1. Correct method

   (a) Accept - $\frac{15}{100}\times 129000$, $0\cdot 15\times 129000$, $\frac{129000}{10}+\frac{1}{2}$ of $\frac{129000}{10}$ or equivalent

   (b) Do not accept - $15\%\times 129000$

2. $137600\left(129000\div 15+129000\right)$ (no working necessary) award 1/3

3. $129015\left(129000+15\right)$ award 0/3

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
13	**Ans: 20 cm**	
	$\bullet^1$ convert to same units	$\bullet^1$ 210 (cm)
	$\bullet^2\bullet^3$ correct method	$\bullet^2\bullet^3$ $[210-(2\times 75)]\div 3$ (award 1 for $210-2\times 75$) or $(210-75)\div 3$)
	$\bullet^4$ carry out three calculations correctly	$\bullet^4$ 20
		4R marks

Notes:

1.

Answer	with working	without working
(a) $0\cdot 2$ (metres)	award 4/4	award 4/4
(b) 17 $([201-150]\div 3)$	award 3/4	award 2/4
(c) $16\cdot 7([200\cdot 1-150]\div 3)$	award 3/4	award 2/4
(d) $49\cdot 3([150-2\cdot 1]\div 3)$	award 2/4	award 1/4

KU 24 marks
RE 30 marks

FINAL TOTALS	**KU 39** **RE 41**

[END OF PAPER 2 MARKING INSTRUCTIONS]