

Principal Assessor Report 2002

Assessment Panel:

Mathematics

Qualification area

**Subject(s) and Level(s)
included in this report**

**Mathematics
Standard Grade**

Statistical information: update

Number of entries in 2001	
Pre appeal	57906
Post appeal	59597

Number of entries in 2002	
Pre appeal	58995
Post appeal	

General comments re entry numbers

The number of entries in 2002 was 58995, an increase of almost 1000 candidates at the Pre-appeal stage and from 2001.

General comments

A most obvious, and welcome, improvement was seen in the non calculator papers. Greater attention was given to and more time was spent on this part of the course.

Candidates continue to improve in structuring responses to show and explain working. Internal and external pressures to constantly improve attainment may be contributing to the number of candidates under prepared for one of their levels of presentation.

Whilst the new examination is still in the process of 'bedding in', candidates appear markedly more comfortable with it than only one year ago. The necessity to write working in Paper 1 may be having a positive effect on the writing of working in Paper 2.

Grade boundaries at C, B and A for each subject area included in the report

Standard Grade: Pass mark stage

Grade	Element	
	Knowledge and Understanding	Reasoning and Enquiry
1	34 (out of 43)	25 (out of 41)
2	23 (out of 43)	17 (out of 41)
3	30 (out of 41)	26 (out of 40)
4	19 (out of 41)	18 (out of 40)
5	25 (out of 40)	26 (out of 39)
6	16 (out of 40)	16 (out of 39)
7		-

General commentary on grade boundaries

Notional percentage cut-offs for each grade

Question papers and their associated marking schemes are designed to be of the required standard and to meet the assessment specification for the subject/level concerned.

For National courses the examination paper(s) are set in order that a score of approximately 50% of the total marks for all components merits a grade C (based on the grade descriptions for that grade), and similarly a score of 70 % for a grade A. The lowest mark for a grade B is set by the computer software as half way between the C and A grade boundaries.

Comments on candidate performance

General comments

Foundation:

Papers 1 and 2 were accessible to most candidates. There was a marked improvement in non calculator skills and in the newer statistical content. Candidates continue to understand the importance of showing working and partial marks were frequently gained. The differential between KU and RE appears reduced.

General:

Again, an improvement in non calculator skills, although a minority of students (most particularly at this level), showed extremely limited understanding of basic skills. An extremely poor Paper 1 could be paired with a reasonable Paper 2. The spread of coursework enabled candidates to access most questions. As ever at this level, markers commented on a number of under prepared candidates.

Credit:

The most marked improvement on non calculator skills was at Credit level. More questions were successfully attempted than in 2001. Clearly this area of the course has received attention in schools.

Omission of some basic coursework was, however, worrying. Time to adequately complete the course, together with internal and external pressures to raise attainment, may be an issue. However, some areas of the course tested in 2001 appeared jettisoned.

RE questioned proved less easy to award partial marks as some candidates wrote down very little when unsure that they could complete the question.

Algebra skills remain poorer than expected; the statistical content of the paper has improved on last year but processing of data remains stronger than comprehension.

Areas of external assessment in which candidates performed well

Foundation:

Paper 1 was, in general, well done. Questions 4, 7, 9(b), 11 and 13 were well done in Paper 2.

General:

In Paper 1, questions 2, 5(a), 6, 7 and 8(a) were well done. In Paper 2, Questions 2, 4(a), (b), 7, 9 and 11.

Credit:

In Paper 1, questions 1, 4, 8 and 13(a),(b) were the most successful. In Paper 2, question 4 was reasonably done, questions 5, 9(a), 10(a) and 11(a), (b) were well done.

Areas of external assessment in which candidates had difficulty

Foundation:

- In Paper 2, Question 1 – lack of knowledge of number of days in August.
Question 8 – lack of understanding of concept of area.
Question 9(a) – confusion over mode and mean.
Question 10(a) – confusion over volume and area.

General:

- In Paper 1, Question 3 – shape frequently given a quarter turn only.
Question 4 – difficulty of finding 30% of a number without access to a calculator.
Question 10 – 4000 the most common answer. Lack of comprehension of meaning of Question.
In Paper 2 Question 1 – changing 3 hours 45 minutes to hours.
Question 10 – confusion of perimeter and area.

Credit:

- In Paper 1, Question 5 – factorisation and simplification.
Question 6 – difficulty in dealing with fraction.
Question 9 – inability to equate two algebraic expressions or to rearrange and solve.
Question 10, 11 – algebraic simplification and manipulation.
Question 13 (c) – some candidates wrote out equations for (a) and (b) but did not realise that these could be used for (c).
In Paper 2, Question 1 – not particularly well done.
Question 2 – fundamental misunderstanding of VAT having been included.
Question 3 – very poor. Difficulties were compounded by lack of knowledge to use the formula, inability to substitute or difficulty in simplification.
Question 9 (b), (c), (d) – an algebraic response proved challenging.
Question 11 (c) – as previous question.
Question 12 – the most challenging question. Assumptions made which increased the question's difficulty.

Recommendations

Feedback to centres

The improving responses to the non calculator papers indicated better preparation of candidates and centres should be congratulated on this. The statistics content also continues to improve.

At General level, however a minority of candidates do not display the basic non calculator skills required although Paper 2 can indicate that they can process information and use reasoning skills. Candidates' willingness to explain working should also be commended.

At Credit level, completion of all areas of the course is paramount. Basic arithmetical work cannot be assumed and must be practised. Algebra skills need to be given higher priority: consistent inability to substitute, simplify or solve an algebraic expression loses a candidate too many marks at this level.

2002 Mathematics

SG – Foundation – Paper 1 & Paper 2

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 $\sin x^0 = 0.5 = 30^0$.

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

2002 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: 13.5 • ¹ add 12.8 and 0.7	• ¹ 13.5 1K mark
(b)	Ans: 365 • ¹ multiply 3.65 by 100	• ¹ 365 (·0) 1K mark
(c)	Ans: 17 • ¹ • ² find one fifth of 85 (award 1 for attempting to divide 85 by 5)	• ¹ $85 \div 5$ • ² 17 2K marks
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
2.	Ans: £121 • ¹ know how to find 25% of 484 • ² find 25% of 484	• ¹ $484 \div 4$ or equivalent • ² 121 2K marks
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3.	Ans: 1750 metres • ¹ know to subtract 3250 from 5000 • ² carry out calculation	• ¹ 5000 – 3250 • ² 1750 2K marks
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark			
4.	Ans: 9:05 pm • ¹ know to add 80 minutes to 7:45 • ² • ³ add time correctly	• ¹ 7:45 + 80 • ² • ³ 9:05 (give 1 for evidence of 80m = 1h 20 m) <div style="text-align: right;">3K marks</div>			
<p>Notes:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> 1. 2105 award 3/3 2. 8:65 (7:45 + 1:20) award $\frac{2}{3}$ 3. 8:25 (7:45 + 0:80 in base ten) award $\frac{1}{3}$ </td> <td style="width: 5%; text-align: center; vertical-align: middle;">}</td> <td style="width: 45%; vertical-align: middle;">no working necessary</td> </tr> </table>			1. 2105 award 3/3 2. 8:65 (7:45 + 1:20) award $\frac{2}{3}$ 3. 8:25 (7:45 + 0:80 in base ten) award $\frac{1}{3}$	}	no working necessary
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Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5. (a)	Ans: £2.90 • ¹ know how to find cost • ² carry out calculation • ³ convert to £'s	• ¹ 10×29 • ² 290 • ³ 2.90 <div style="text-align: right;">3K marks</div>
Notes:		
(b)	Ans: £2.66 • ¹ • ² find cheapest combination of packs and cartons • ³ know how to find cost • ⁴ find cost (must involve at least two calculations)	• ¹ • ² 3 packs and 1 carton (give 1 for 2 packs and 4 cartons or 1 pack and 7 cartons or 4 packs) • ³ $3 \times 79 + 29$ • ⁴ 2.66 <div style="text-align: right;">4R marks</div>
Notes:		
1.	$2.74 (2 \times 79 + 4 \times 29)$ $2.82 (1 \times 79 + 7 \times 29)$	$\times \checkmark \checkmark \checkmark$ award 3/4
2.	$3.16, 316, 4 \times 79$	$\times \checkmark \times \times$ award 1/4
3.	$3 \times 79 + (79 \div 3) = 2.63$	$\times \checkmark \checkmark \checkmark$ award 3/4
4.	$10 \times 26 = 2.60$	$\times \times \checkmark \checkmark$ award 2/4
5.	$9 \times 79 + 29 = 7.40$	$\times \times \times \checkmark$ award 1/4
<div style="display: flex; align-items: center; justify-content: center;"> <div style="font-size: 3em; margin-right: 10px;">}</div> <div style="text-align: center;">no working necessary</div> </div> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="font-size: 3em; margin-right: 10px;">}</div> <div style="text-align: center;">working must be shown</div> </div>		
6.	For $79 \div 3$ disregard digits following the decimal point: Accept 26 or 27.	

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6. (a)	Ans: £750 • ¹ interpret line graph	• ¹ 750 1K mark
(b)	Ans: £250 • ¹ strategy • ² carry out calculation	• ¹ 750 – 500 • ² 250 2R marks
(c)	Ans: May • ¹ make deduction	• ¹ May 1R mark
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7.	Ans: £15 400 • ¹ strategy • ² strategy • ³ carry out calculations	• ¹ $8700 - 2000$ • ² $8700 + (8700 - 2000)$ • ³ 15 400 3R marks
Notes:		

KU 15 marks
RE 10 marks

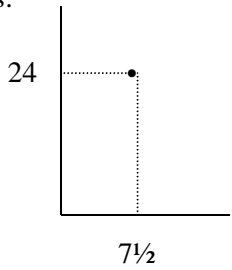
[END OF PAPER 1 MARKING INSTRUCTIONS]

2002 Mathematics SG - Foundation Level - Paper 2

Marking Instructions

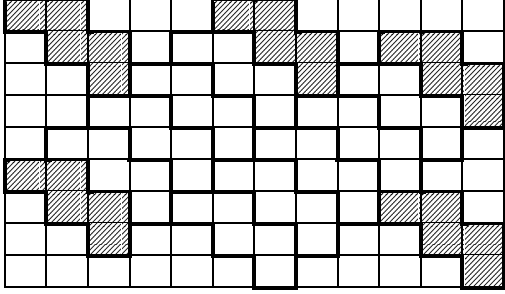
Award marks in whole number only

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark						
1.	Ans: 4 September • ¹ know there are 31 days in August • ² correctly add 7 days onto 28 August	• ¹ evidence of 31 days in August • ² 4 September 2K marks						
<p>Notes:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;">1. 5th September</td> <td style="width: 15%;">award 1/2</td> <td rowspan="2" style="font-size: 3em; vertical-align: middle;">}</td> <td rowspan="2" style="vertical-align: middle;">no working necessary</td> </tr> <tr> <td>2. 4th, 4th any month except September</td> <td>award 1/2</td> </tr> </table>			1. 5 th September	award 1/2	}	no working necessary	2. 4 th , 4 th any month except September	award 1/2
1. 5 th September	award 1/2	}	no working necessary					
2. 4 th , 4 th any month except September	award 1/2							

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4. (a)	Ans: 8 hours £26 • ¹ interpret scattergraph • ² interpret scattergraph	• ¹ 8 • ² 26 2K marks
Notes:		
(b)	Ans:  • ¹ know how to calculate weekly wage • ² calculate weekly wage • ³ communicate information on scattergraph • ⁴ communicate information on scattergraph	• ¹ $7\frac{1}{2} \times 3 \cdot 20$ • ² 24 • ³ $7\frac{1}{2}$ plotted • ⁴ 24 plotted 4R marks
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark																					
5.	<p>Ans:</p> <table border="1" data-bbox="480 380 692 624"> <tr><td>6</td><td>4</td><td>5</td></tr> <tr><td>6</td><td>3</td><td>6</td></tr> <tr><td>5</td><td>5</td><td>5</td></tr> <tr><td>5</td><td>4</td><td>6</td></tr> <tr><td>4</td><td>6</td><td>5</td></tr> <tr><td>4</td><td>5</td><td>6</td></tr> <tr><td>3</td><td>6</td><td>6</td></tr> </table> <ul style="list-style-type: none"> •¹ find one possibility •² find more possibilities •³ find more possibilities 	6	4	5	6	3	6	5	5	5	5	4	6	4	6	5	4	5	6	3	6	6	<ul style="list-style-type: none"> •¹ one other correct row •² another two correct rows •³ another two correct rows <p style="text-align: right;">3R marks</p>
6	4	5																					
6	3	6																					
5	5	5																					
5	4	6																					
4	6	5																					
4	5	6																					
3	6	6																					
<p>Notes:</p>																							

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6. (a)	Ans: $a = 7$ metres, $b = 8$ metres • ¹ know how to find a • ² know how to find b • ³ add and subtract correctly	• ¹ $a = 3 + 4$ • ² $b = 14 - 6$ • ³ $a = 7, b = 8$ 3R marks
Notes:		
(b)	Ans: 42 metres • ¹ know how to find perimeter • ² add correctly (at least 4 numbers)	• ¹ $14 + a + 6 + 3 + b + 4$ • ² 42 2K marks
Notes:		
1.	27 (14 + 6 + 3 + 4)	award 1/2 no working necessary

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7.	<p>Ans:</p>  <ul style="list-style-type: none"> •¹ interpret diagram and continue pattern •² continue pattern •³ continue pattern 	<ul style="list-style-type: none"> •¹ one tile added to pattern •² second tile added to pattern •³ third tile added to pattern <p style="text-align: right;">3R marks</p>
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
9. (a)	Ans: 30 pupils • ¹ identify mode	• ¹ 30 1K mark
(b)	Ans: 28 pupils • ¹ • ² know how to find mean • ³ add correctly • ⁴ divide correctly	• ¹ • ² $(24 + 25 + 27 + 29 + 30 + 30 + 31) \div 7$ • ³ 196 • ⁴ 28 4K marks
Notes: 1. 169(.4....) $(24 + 25 + 27 + 29 + 30 + 30 + 31 \div 7)$ award 3/4 (incorrect use of calculator) no working necessary 2. 196 award 1/4 no working necessary		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
10. (a)	Ans: 343 cubic centimetres • ¹ know how to find volume of cube • ² find volume of cube	• ¹ $7 \times 7 \times 7$ • ² 343 2K marks
(b)	Ans: 5 8 centimetre cubes 4 10 centimetre cubes • ¹ experiment • ² experiment further • ³ continue to experiment until answer is found	• ¹ • ² • ³ 5 × 8cm cubes and 4 × 10cm cubes (give 2 for another combination of 8cm & 10cm cubes with same heights) (give 1 for evidence of comparing height of a stack of 8cm cubes with height of a stack of 10cm cubes) 3R marks
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark											
11.	Ans: 9 cups • ¹ know that 1 litre = 1000 ml • ² convert 1.8 litres to ml or 200ml to litres • ³ know to find kettle ÷ cup • ⁴ divide correctly	• ¹ • ² 1800 or 0.2 (award 1 for evidence of 1L = 1000ml or for 180, 18, 20 or 2) • ³ 1800 ÷ 200 or 1.8 ÷ 0.2 • ⁴ 9 4K marks											
Notes: <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">1.</td> <td style="width: 35%;">0.9 (180 ÷ 200), 0.09 (18 ÷ 200)</td> <td style="width: 15%;">award 3/4</td> <td rowspan="3" style="font-size: 3em; vertical-align: middle; padding-left: 10px;">}</td> <td rowspan="3" style="vertical-align: middle;">no working necessary</td> </tr> <tr> <td>2.</td> <td>0.009 (1.8 ÷ 200)</td> <td>award 2/4</td> </tr> <tr> <td>3.</td> <td>111 (200 ÷ 1.8)</td> <td>award 1/4</td> </tr> </table>			1.	0.9 (180 ÷ 200), 0.09 (18 ÷ 200)	award 3/4	}	no working necessary	2.	0.009 (1.8 ÷ 200)	award 2/4	3.	111 (200 ÷ 1.8)	award 1/4
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Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
12. (a)	Ans: 225° • ¹ interpret diagram	• ¹ 225 1K mark
(b)	Ans: 330° • ¹ strategy • ² strategy • ³ carry out calculations	• ¹ $360 \div 12$ or equivalent • ² $360 -$ (answer to above) • ³ 330 3R marks
Notes: 1. $270 < \text{bearing} < 360$ but $\neq 330$ award 1/4 no working necessary		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
13.	Ans: 96 kilometres • ¹ know how to find number of loads • ² know to round up • ³ know how to find distance • ⁴ correctly calculate loads $\times 2 \times 12$	• ¹ $100 \div 30$ • ² 4 • ³ loads $\times 2 \times 12$ • ⁴ 96 <div style="text-align: right;">4R marks</div>

Notes:

1. If candidate correctly calculates distance = loads $\times 12$ then 4th mark can only be awarded for using loads = 3, 4, $100 \div 30$ (disregard incorrect or no rounding) or 7.

2.	<u>Final Answers</u>	<u>with working</u>	<u>without working</u>
a	84 (7×12)	3/4	2/4
b	48 (4×12)	3/4	2/4
c	36 (3×12)	2/4	1/4
d	39.6 (3.3×12)	2/4	1/4
e	40 ($100 \div 30 \times 12$)	2/4	1/4

KU 25 marks
RE 29 marks

FINAL	KU 40
TOTALS	RE 39

[END OF PAPER 2 MARKING INSTRUCTIONS]

2002 Mathematics

SG – General – Paper 1 & Paper 2

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.

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

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- 12 Do not penalise bad form eg $\sin x^0 = 0.5 = 30^0$.

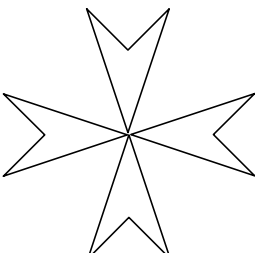
- 13 A transcription error is not normally penalised except where the question has been simplified as a result.

- 14 Do not penalise inadvertent use of radians in trigonometry questions, provided its use is consistent within the question.

Mathematics Standard Grade - General Level 2002 – Paper 1

Marking Instructions

Award marks in whole numbers only.

Question No.	Solution	Mark	Comments
1	(a) • 11.96	1 mark	
	(b) • 58.32	1 mark	
	(c) • 2.29	1 mark	
	(d) • $3 \times \frac{11}{4}$ or equivalent	1 mark	
	• $8\frac{1}{4} \left(\frac{33}{4}, 8.25 \right)$	1 mark	
Notes			
In part (d)			
(i) A valid strategy may include: 3×2.75 or $(3 \times 2) + (3 \times \frac{3}{4})$			
(ii) Final mark cannot be awarded for incorrect working subsequent to a correct answer.			
(iii) For correct final answer without working – award 2/2.			
2	(a) • 3/15 (or 1/5)	1 mark	for numerator for denominator
	(b) • 6/14 (or 3/7)	1 mark 1 mark	
Notes			
(i) Simplification of fraction not required.			
(ii) Accept variations in language eg 3 out of 15, 3 –15, 3 to 15, 3 : 15			
3	• • • 	1 mark 1 mark 1 mark	for bottom kite for right kite for left kite

Question No.	Solution	Mark	Comments
4	<ul style="list-style-type: none"> • $5M \div 10 \times 3$ • $= 1.5M (1\ 500\ 000)$ 	1 mark 1 mark	for dividing by 10 and multiplying by 3 (or equivalent) correct calculation
Notes			
For correct final answer without working – award 2/2.			
5	<p>(a)</p> <ul style="list-style-type: none"> • Two points correctly plotted • Further point correctly plotted <p>(b)</p> <ul style="list-style-type: none"> • $m = 2/7$ • <p>(c)</p> <ul style="list-style-type: none"> • D correctly plotted • $(-3, 2)$ 	1 mark 1 mark 1 mark 1 mark 1 mark	for correct numerator for correct denominator for plotting point D to complete parallelogram for consistent coordinates
6	<ul style="list-style-type: none"> • 0.04 $\frac{1}{4}$ 4/10 0.404 41% • 	1 mark 1 mark	for any 3 in correct order for further 2 correct
7	<ul style="list-style-type: none"> • Angle COB = 64° • 	1 mark 1 mark	For a valid strategy leading to solution Correct calculations
Notes			
(i) A valid strategy may be $180^\circ - (26^\circ + 90^\circ)$ or $\frac{1}{2} [180^\circ - (26^\circ + 26^\circ)]$			
(ii) For correct final answer without working – award 2/2.			
8	<p>(a)</p> <ul style="list-style-type: none"> • Points plotted correctly • • <p>(b)</p> <ul style="list-style-type: none"> • Appropriate line drawn <p>(c)</p> <ul style="list-style-type: none"> • Approx. 54 (± 2) 	1 mark 1 mark 1 mark 1 mark 1 mark	for 5 points correct for further 3 points for further 2 points (must refer to line)

Question No.	Solution	Mark	Comment
9	• Plant A change in height = 28(cm)	1 mark	
	• Plant B change in height = 25(cm)	1 mark	
	• Plant A by 3(cm)	1 mark	
Notes			
For correct final answer without working – award 2/3.			
10	• $4 \times 20\,000$	1 mark	for knowing to multiply by 4
	• $= 80\,000 \div 5$	1 mark	for knowing to divide by 5
	• $= 16\,000$	1 mark	all calculations correct
Notes			
(i) For correct final answer without working – award 2/3.			
(ii) For an answer of 4000 with or without working – award 1/3.			

KU	RE
18	16

[END OF PAPER 1 MARKING INSTRUCTIONS]

Mathematics Standard Grade - General Level 2002 – Paper 2

Marking Instructions

Question No.	Solution	Mark	Comments
1	<ul style="list-style-type: none"> $D = 76 \times 3.75$ $= 285(\text{km})$ 	1 mark 1 mark	for substitution in $D = S \times T$
Notes			
<u>Acceptable final answers</u>		<u>with and without working</u>	
	285		2/2
	17100		1/2
	262.2		1/2
	20.26		1/2
2	(a) <ul style="list-style-type: none"> $779 \times 0.175 = 136.325$ $(\pounds)915.325$ $(\pounds)915.32$ or $(\pounds)915.33$ 	1 mark 1 mark 1 mark	for VAT for total price for rounding
	(b) <ul style="list-style-type: none"> $915.32 - 900 = 15.32$ or $915.33 - 900 = 15.33$ Double the diff = $(\pounds)30.64$ or $(\pounds)30.66$ 	1 mark 1 mark	(a) – 900 $2 \times ((a) - 900)$
Notes			
	<u>Final answers</u>	<u>with working</u>	<u>without working</u>
(i)	(a) $(\pounds)915.32$	3/3	2/3
	$(\pounds)915.33$	3/3	2/3
	$(\pounds)915.30$	2/3	1/3
	(b) $(\pounds)30.64$	2/2	2/2
	$(\pounds)30.66$	2/2	2/2
(ii)	in part (b), if answer in part (a) is < 900 , for a response of "No Refund" – award 1/2, for any other response – award 0/2		

Question No.	Solution	Mark	Comments							
3	(a) • $V = 3 \cdot 14 \times 20^2 \times 450$	1 mark	for substitution							
	• $= 565\,200(\text{cm}^3)$	1 mark	for correct calculation must include squaring							
	(b) • $5 \cdot 65 \times 10^5(\text{cm}^3)$	1 mark	for scientific notation							
Notes										
(i) In part (a)										
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Final answers</u></td> <td style="text-align: center;"><u>with and without working</u></td> </tr> <tr> <td style="text-align: center;">565 200</td> <td style="text-align: center;">2/2</td> </tr> <tr> <td style="text-align: center;">565 486 (.67...)</td> <td style="text-align: center;">2/2</td> </tr> </table>				<u>Final answers</u>	<u>with and without working</u>	565 200	2/2	565 486 (.67...)	2/2	
<u>Final answers</u>	<u>with and without working</u>									
565 200	2/2									
565 486 (.67...)	2/2									
(ii) In part (b) ignore rounding.										
4	(a)	<table style="border: none;"> <tr> <td style="padding-right: 20px;">2 4</td> <td>12</td> </tr> <tr> <td>• 15 29</td> <td>85</td> </tr> <tr> <td>•</td> <td></td> </tr> </table>	2 4	12	• 15 29	85	•		1 mark 1 mark	for 15 & 29 for 85
	2 4	12								
	• 15 29	85								
	•									
	(b)	• $b = 7s + 1$ •	2 marks	(or 0)						
	(c)	• $7s + 1 = 176$	1 mark	for appropriate substitution in (b)						
• $s = 25$		1 mark	for correct solution							
Notes										
(b) (i) For $(=) 7s + 1$ – award 1/2 (ie without b)										
(ii) Do not penalise bad form										
(iii) A formula in words is not acceptable										
(iv) $s = 7b + 1$ – award 0/2.										
(c) (i) Solution may be obtained by extending table										
(ii) A final answer of 25 without working – award 0/2										
(iii) If equation in (b) is of form $b = a s$, maximum mark available is 1/2										
5	• $\text{eg } 4 \cdot 5 / 100 \times 1\,640 = 73 \cdot 80$	1 mark	for appropriate calculation of 4.5%							
	• $\text{eg } 73 \cdot 80 \times 9 / 12$	1 mark	for mult by 9/12							
	• $= (\pounds)55 \cdot 35$	1 mark	for both calculations correct							
Notes										
(i) For correct answer without working – award 2/3										
(ii) For an answer of £1695.35 without working – award 1/3										

Question No.	Solution	Mark	Comments	
8	(a)	• Correct diagram	1 mark	for HP drawn correctly
		•	1 mark	for $\angle THP = 90^\circ$
		•	1 mark	for HT drawn correctly
		•	1 mark	for completion of diagram
	(b)	• $12.5 \text{ (cm)} \pm 0.5 \text{ cm}$	1 mark	for correctly measuring length of PT
		• $25 \text{ (cm)} \pm 1 \text{ cm}$	1 mark	correct scaling of measurement

Notes

- (i) In (a) check candidate drawing and apply tolerances of $\pm 2^\circ$ and $\pm 0.2 \text{ cm}$.
- (ii) If diagram is drawn full size (ie no scale applied) max marks available are 1/4 in part (a) and 1/2 in part (b).
- (iii) In (b) if the length of side is not measured from the scale drawing then no marks can be awarded.
- (iv) In (b) for an answer without working but consistent with the scale drawing – award 2/2.

9	(a)	• $12x + 8 = 68$	1 mark	for expanding bracket (or equivalent)
		• $12x = 60$	1 mark	for simplifying
		• $x = 5$	1 mark	for solution
	(b)	• $5(\quad)$	1 mark	
		• $5(2y + 3)$	1 mark	for $2y + 3$

Notes

In part (a) for $x = 5$ without working – award 0/3.

Question No.	Solution	Mark	Comments	
10	(a)	• $C = \pi 120 = 376.8$	1 mark	for appropriate strategy conclusion with numerical comparison
		• $\frac{1}{2} C = 188.4$	1 mark	
		• Total = $188.4 + 120 = 308.4(\text{cm})$	1 mark	
	(b)	• $16 \times 3.08 = 49.36(\text{m})$	1 mark	
		• Yes as $49.36(\text{m}) < 50(\text{m})$	1 mark	

Notes

In part (a)

(i)	<u>Final answers</u>	<u>with working</u>	<u>without working</u>
	308.4	3/3	2/3
	188.4	2/3	1/3
	376.8	1/3	1/3

(ii) Be aware of variations to above when π button on calculator is used.

11	• HP price = $1.22 \times 6\,300 = (\pounds)7\,686$	1 mark	for knowing to find 22% + cost
	• Deposit = $0.15 \times 6\,300 = (\pounds)945$	1 mark	for knowing to find 15% of cost
	• Instalments = $(7\,686 - 945)/60$ = $6\,741/60$	1 mark	for knowing to find $(\text{HP} - \text{dep}) \div \text{instal}$
	• $= (\pounds)112.35$	1 mark	all calculations correct (min. two)

Notes

For correct final answer without working – award 2/4.

KU	RE
23	24

FINAL TOTALS	41	40
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[END OF PAPER 2 MARKING INSTRUCTIONS]

2002 Mathematics

SG – Credit – Paper 1 & Paper 2

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 $\sin x^0 = 0.5 = 30^0$.

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

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
2	<p>Ans: $1\frac{1}{2}$ or $\frac{3}{2}$</p> <ul style="list-style-type: none"> • starting correct process • all calculations correct 	<ul style="list-style-type: none"> • $(\times \frac{4}{3})$ • $1\frac{1}{2} / \frac{3}{2}$ <p style="text-align: right;">2 KU</p>
<p>Notes:</p> <p>(i) correct answer (or equivalent) with or without working award 2/2</p> <p>(ii) $1\frac{1}{6}$ with working $\left(\frac{1}{8} \times \frac{4}{3}\right)$ award 1/2</p> <p>(iii) $1\frac{1}{6}$ without working award 0/2</p> <p>(iv) $\frac{27}{32}$ with or without working award 1/2</p> <p>(v) $\frac{2}{3}$ with working $\left(\frac{8}{9} \times \frac{3}{4}\right)$ award 1/2</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	<p>Ans: $x < 1$</p> <ul style="list-style-type: none"> • dealing with bracket • collecting like terms • consistent answer 	<ul style="list-style-type: none"> • $2x + 2$ • $3 > 3x$ or $-3x > -3$ • inequality <p style="text-align: right;">3 KU</p>
<p>Notes:</p> <p>(i) $x = 1$ with working award 2/3</p> <p>(ii) correct answer with no working award 0/3</p> <p>(iii) last mark is not available if coefficient of $x = 1$</p> <p>eg $3x < 3 \Rightarrow x < 1$ ✓</p> <p>$-x > -1 \Rightarrow x < 1$ ✓</p> <p>$x < 1 \Rightarrow$ no further working ✗</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4	Ans: -6 <ul style="list-style-type: none"> • correct substitution • calculation 	<ul style="list-style-type: none"> • $(-3)^2 + 5(-3)$ • -6 <p style="text-align: right;">2 KU</p>
Notes: (i) -6 with or without working award 2/2		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
5 (a)	Ans: $(p - 2q)(p + 2q)$ <ul style="list-style-type: none"> • correct factors 	<ul style="list-style-type: none"> • answer <p style="text-align: right;">1 KU</p>
(b)	Ans: $\frac{p - 2q}{3}$ <ul style="list-style-type: none"> • common factor • simplification 	<ul style="list-style-type: none"> • $3(p + 2q)$ • consistent answer <p style="text-align: right;">2 KU</p>
Notes: (i) Correct answer without working award 2/2		
6	Ans: $h = 2L + t$ <ul style="list-style-type: none"> • dealing with fraction • communicate appropriately 	<ul style="list-style-type: none"> • $2L = h - t$ (or equivalent) • $h = 2L + t$ <p style="text-align: right;">2 KU</p>
Alternative method <ul style="list-style-type: none"> • removing brackets and transposing the term in t • dividing by coefficient of h 		<ul style="list-style-type: none"> • $\frac{1}{2}h = L + \frac{1}{2}t$ • $h = \frac{L + \frac{1}{2}t}{\frac{1}{2}}$
Notes: (i) correct answer with no working award 2/2		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
7	Ans: Proof <ul style="list-style-type: none"> • starting process • substitution • clear logical steps 	<ul style="list-style-type: none"> • relevant use of Cosine rule with an attempted substitution • correct substitution leading to a value for Cos A • $\frac{5}{40} \rightarrow \frac{1}{8}$ <p style="text-align: right;">3 KU</p>
Notes: (i) Intermediate steps from substitution to correct value <u>must</u> be shown.		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
8	Ans: Annotated diagrams <ul style="list-style-type: none"> • statistical diagram • annotation • comparison 	<ul style="list-style-type: none"> • appropriate choice • both correct sets of data, labelled • appropriate display of second set of data <p style="text-align: right;">3 RE</p>
Notes: <p>(i) An inappropriate choice of diagrams award 0/3</p> <p>(ii) All diagrams <u>must</u> be clearly labelled <u>and</u> scaled. Keys required</p> <p>(iii) Appropriate diagrams: Appropriate comparison</p> <ul style="list-style-type: none"> • stem and leaf back/back • box plots $Q_1 = 22$ $Q_2 = 31$ $Q_3 = 39$ same scale $Q_1 = 25$ $Q_2 = 34$ $Q_3 = 46$ • bar charts (using grouped frequencies) comparative 		
9	Ans: $x = -1, 4$ <ul style="list-style-type: none"> • strategy • rearranging and factorisation • consistent solutions 	<ul style="list-style-type: none"> • equating two formulae <u>or</u> trial and improvement • $(x + 1)(x - 4)$ • $x = -1$ <u>and</u> $x = 4$ <p style="text-align: right;">3 RE</p>
Notes: <p>(i) One correct value of x with no working award 0/3</p> <p>(ii) Both correct values of x with no working award 2/3</p> <p>(iii) Trial and Improvement must have minimum of 3 trials</p> <p>(iv) Trial and Improvement: Minimum of 3 trials and one value for x award 2/3 Minimum of 3 trials and both values for x award 3/3</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
10	Ans: $5\sqrt{3}$ <ul style="list-style-type: none"> • simplification of surd • combination of surds 	<ul style="list-style-type: none"> • $3\sqrt{3}$ • $5\sqrt{3}$ <p style="text-align: right;">2 KU</p>
11	Ans: y^2 <ul style="list-style-type: none"> • multiplication rule • addition rule 	<ul style="list-style-type: none"> • y^{-6} • y^2 <p style="text-align: right;">2 KU</p>
12	Ans: $g = \frac{7}{9}h + 12$ <ul style="list-style-type: none"> • interpretation of graph • processing gradient • identification of c • consistent equation 	<ul style="list-style-type: none"> • (0, 12) (90 82) • $m = \frac{7}{9}$ • $c = 12$ (or shown in equation) • $g = \frac{7}{9}h + 12$ <p style="text-align: right;">4 RE</p>

Notes:

- (i) The first mark need not be explicitly stated
- (ii) The third mark need not be explicitly stated
- (iii) Interchange of h and g cannot gain last mark
- (iv) Use of x and y cannot gain last mark
- (v) $g = \frac{7}{9}h + 12$ with or without working
- (vi) $y = \frac{7}{9}x + 12$ with or without working
- (vii) The point (0, 12) does not gain third mark

award 4/4

award 3/4

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
13 (a)	Ans: $4p + 3g = 130$	1 KU
(b)	Ans: $2p + 4g = 120$ or equivalent	1 KU
(c) Method 1	Ans: 92p <ul style="list-style-type: none"> • valid strategy • scaling • value of second variable • consistent answer 	<ul style="list-style-type: none"> • attempting a correct scaling to solve simultaneously <u>or</u> $p = 60 - 2g$ • correct multiplier <u>or</u> correct substitution to obtain consistent value for one variable • $g = 22$ or $p = 16$ • cost = 92p or (48 and 44) 4 RE
Notes: (i) correct answer without working award 0/4 (ii) last mark must be explicitly stated: $92p$ or $p = 48$ $g = 44$		
(c) Method 2	<ul style="list-style-type: none"> • valid strategy • continuing strategy • interpretation • consistent answer 	<ul style="list-style-type: none"> • axes on <u>graph</u> paper <u>AND</u> both lines attempted • both lines correct • $p = 16$, $g = 22$ • cost = 92p or $p = 48$ $g = 44$ 4 RE
Notes: (i) Candidates who use blank paper can gain only last mark		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
(c) Method 3	<ul style="list-style-type: none"> • valid strategy • continuing strategy • valid values • consistent answer 	<ul style="list-style-type: none"> • testing <u>at least</u> 2 pairs of values in <u>both</u> equations • testing <u>at least</u> 3 pairs in both equations • $p = 16, g = 22$ • $\text{cost} = 92p$ (or $p = 48, g = 44$) <p style="text-align: right;">4 RE</p>
<p>Notes:</p> <p>(i) Candidates who do not test <u>at least</u> 3 pairs of values can gain only the last mark</p>		

KU 23 marks
RE 14 marks

[END OF PAPER 1 MARKING INSTRUCTIONS]

2002 Mathematics SG – Credit Level - Paper 2

Marking Instructions

Award marks in whole number only

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
1	Ans: 3.43×10^{-3} <ul style="list-style-type: none">• calculation• scientific notation	<ul style="list-style-type: none">• 0.0034308• 3.4308×10^{-3} <p style="text-align: right;">2 KU</p>
Notes: (i) Correct answer without working award 2/2 (ii) 3.4308^{-3} award 1/2 (first mark) (iii) Disregard rounding		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
2	Ans: £127.66 <ul style="list-style-type: none"> • percentage • ratio • appropriate answer 	<ul style="list-style-type: none"> • 117.5% • $\frac{100}{117.5}$ (0.851) • £127.66 (65) <p style="text-align: right;">3 KU</p>
Notes: <p>(i) Correct answer without working award 3/3</p> <p>(ii) £176.25 $\left(150 \times \frac{117.5}{100}\right)$ with working award 2/3</p> <p>(iii) £176.25 $\left(150 \times \frac{117.5}{100}\right)$ without working award 0/3</p> <p>(iv) £123.75 (82.5% of 150) with or without working award 0/3</p> <p>(v) In the last mark, rounding up or down to the nearest penny is the only acceptable rounding.</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
3	<p>Ans: 1·3 or –2·8</p> <ul style="list-style-type: none"> • use of quadratic formula • calculation • continuation of process • rounding 	<ul style="list-style-type: none"> • correct substitution • first value of x • consistent second value of x • rounding <u>both</u> correctly <p style="text-align: right;">4 KU</p>
<p>Notes:</p> <p>(i) Incorrect factorisation award 0/4</p> <p>(ii) Do not penalise premature rounding</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
4	<p>Ans: 190·8 km</p> <ul style="list-style-type: none"> • valid strategy • substitution • calculation • correct ratio/substitution • consistent calculation 	<ul style="list-style-type: none"> • use of sine rule for Δ STV • correct substitution into sine rule (must include 105°) • $SV = 296\cdot9$ km $ST = 332\cdot7$ km • correct use of sine ratio • $h = 190\cdot8$ km <p style="text-align: right;">5 RE</p>
<p>Notes:</p> <p>(i) Use of scale drawing award 0/5</p> <p>(ii) For the first mark, the sine rule must be used for triangle STV</p> <p>(iii) Calculations must be within a valid strategy ie</p> <ul style="list-style-type: none"> • Sine rule and right angled triangle 		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
6 (a)	Ans: 3.3 m <ul style="list-style-type: none"> • diagram interpretation • use of Pythagoras • interpretation 	<ul style="list-style-type: none"> • $3.4 - 2.1 = 1.3$ • value of $\frac{1}{2}x = 1.649$ • $x = 3.2984$ (3.3) m <p style="text-align: right;">3 KU</p>
(b)	Ans: 0.8 m	<p style="text-align: right;">1 RE</p>
Notes:		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
<p style="text-align: center;">7</p> <p>Method 1</p> <p>Method 2</p>	<p>Ans: 41 one kg tins</p> <ul style="list-style-type: none"> • valid strategy • continue strategy • appropriate rounding <ul style="list-style-type: none"> • valid strategy • calculation of weight • appropriate rounding 	<ul style="list-style-type: none"> • 400 gms + 600 gms = 1 kg plus no. of tins of 1st type • no. of tins of 2nd type • answer plus appropriate rounding • $\frac{20}{2}, \frac{25}{3}$ and calculating 16.66 • $16.66 + 25 = 41.66$ • 41 <p style="text-align: right;">3 RE</p>
<p>Notes:</p> <p>(i) Correct answer without working award 1/3</p> <p>(ii) The last mark <u>cannot</u> be gained if rounding down comes from a fraction less than 0.5 eg</p> <p style="margin-left: 20px;">39.8 → 39 gains last mark 39.2 → 39 does not gain last mark</p> <p>(iii) Trial and Error may be used as follows: Marks 1 and 3 as above Mark 2 must show 4 sets of values one of which must show more than available weights</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
8	<p>Ans: A B</p> <p>23.6°, 156.4°</p> <ul style="list-style-type: none"> • interpretation • solving equation • continuing process 	<ul style="list-style-type: none"> • $\sin x^\circ = 0.4$ • first value • second value <p style="text-align: right;">3 RE</p>
<p>Notes:</p> <p>(i) Both values correct without working award 3/3</p> <p>(ii) For one value only without working award 0/3</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
9 (a)	Ans: 110p	1 KU
(b)	Ans: $c = 75 + 5(m - 3)$	1 RE
(c)	Ans: $c = 80 + 2(m - 2)$	1 RE
(d)	<p>Ans: 6 minutes or more</p> <ul style="list-style-type: none"> • interpretation • solution of inequality • appropriate response 	<ul style="list-style-type: none"> • $80 + 2(m - 2) < 75 + 5(m - 3)$ or $80 + 2(m - 2) = 75 + 5(m - 3)$ • $m > 5.33$ or $m = 5.33$ • GC : $t = 6$ <p style="text-align: right;">3 RE</p>
<p>Notes:</p> <p>(i) Final mark requires evidence of rounding up</p> <p>(ii) Correct response with no working – award 0/3</p>		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
10 (a)	Ans: $T = \frac{kv^2}{r}$	1 KU
(b)	Ans: $\times 18$ <ul style="list-style-type: none"> • substitution • consistent calculation 	<ul style="list-style-type: none"> • $(3v)^2$ <u>OR</u> $\frac{r}{2}$ • $\times 18$ 2 RE
Notes: <ul style="list-style-type: none"> (i) The second mark can only be awarded for a change in both v and r (ii) One mark can be awarded without working only for an explicit statement "multiplied by 18" "x 18" is 		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
11 (a)	Ans: $n = 5$	1 KU
(b)	Ans: $1 + 2 + 4 + 8 + 16 = 32 - 1$	1 RE
(c)	Ans: $2^n - 1$ <ul style="list-style-type: none"> • finding n^{th} term • finding sum of n terms 	<ul style="list-style-type: none"> • 2^n • $2^n - 1$ 2 RE
Notes: (i) 2^n must be explicitly stated for the first mark. (ii) An expression in " $n^n - 1$ [except $(n - 1)$]" gain one mark.		

Question No	Give 1 mark for each •	Illustrations of evidence for awarding each mark
12	Ans: 3m <ul style="list-style-type: none"> • valid strategy • calculation • calculation • second valid strategy • calculation 	<ul style="list-style-type: none"> • correct ratio or $\angle B = 14.48$ • $PB = 4m$ • $AP = 2m$ • correct ratio or $\angle A = 30^\circ$ • $h = 3 m$ <p style="text-align: right;">5 RE</p>

Notes:

- (i) Only valid strategies are similar triangles or trigonometry
- (ii) Candidates need not use the same strategy for both diagrams
- (iii) A scale drawing receives 0 marks
- (iv) Correct answer without working gains 0 marks
- (v) Candidates who assume the base lines are equal
 - $\angle B = 14.48$
 - Base = 5.8 (which must be used in the 2nd triangle)
 - not available
 - calculating $\angle A$
 - height must be calculated from $\angle A$
- (vi) Candidates who assume 2 Congruent triangles may receive the first mark only.

KU 20 marks
RE 27 marks

FINAL	KU 43
TOTALS	RE 41

[END OF MARKING INSTRUCTIONS]