



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Primary Achievement Test

MATHEMATICS

0842/02

Paper 2

May/June 2008

MARK SCHEME

Maximum Mark : 39

IMPORTANT NOTICE

Mark Schemes have been issued on the basis of **one** copy per Assistant examiner and **two** copies per Team Leader.



This document consists of **14** printed pages and **2** blank pages.



Mathematics mark schemes – Achievement Test

Guidelines for marking test papers

These mark schemes are designed to provide you with all the information necessary to mark the Primary Mathematics Achievement Tests. As far as possible, the mark schemes give you full guidance regarding acceptable and unacceptable alternative answers and, where appropriate, include examples of student work to illustrate the marking points. However, it is not always possible to predict all the alternative answers that may be produced by students and there could be places where the marker will have to use their professional judgement. In these cases it is essential that such judgement be applied consistently.

The guidelines below should be followed throughout (**unless the mark scheme states otherwise**):

- A correct answer should always be awarded full marks even if the working shown is wrong.
- Where more than one mark is available for a question the mark scheme explains where each mark should be awarded. In some cases marks are available for demonstration of the correct method even if the final answer is incorrect. The method marks can be awarded if the correct method is used but a mistake has been made in the calculation, resulting in a wrong answer. Method marks can also be awarded if the calculation is set up and performed correctly but incorrect values have been used, e.g. due to misreading the question or a mistake earlier in a series of calculations.
- If a question uses the answer to a previous question or part question that the child answered incorrectly, all available marks can be awarded for the latter question if appropriate calculations are performed correctly using the value carried forward. Places where such consideration should be made are indicated in the mark schemes. In these cases, it is not possible to provide all the alternative acceptable answers and the marker must follow the child's working to determine whether credit should be given or not.
- Half marks should not be awarded and at no point should an answer be awarded more than the maximum number of marks available, regardless of the quality of the answer.
- If the child has given more than one answer, the marks can be awarded if all the answers given are correct. However, if correct and incorrect answers are given together, marks should not be awarded (marks for correct working out can still be gained).
- If the answer line is blank but the correct answer is given elsewhere, e.g. an annotation on a graph or at the end of the working out, the marks can be awarded provided it is clear that the child has understood the requirements of the question.
- If the response on the answer line is incorrect but the correct answer is shown elsewhere, full marks can still be awarded if the child has made the error when copying the answer onto the answer line. If the incorrect final answer is the result of redundant additional working after the correct answer had been reached, the marks can be awarded provided the extra work does not contradict that already done.

- Each question and part question should be considered independently and marks for one question should not be disallowed if they are contradicted by working or answers in another question or part question.
- Any legible crossed-out work that has not been replaced can be marked; but, if work has been replaced, the crossed-out part should be ignored.
- If the child's response is numerically or algebraically equivalent to the answer in the mark scheme, the mark should be given unless a particular form of answer was specified by the question.
- Diagrams, symbols or words are acceptable for explanations or responses.
- Where students are required to indicate the correct answer in a specific way, e.g. by underlining, marks should be awarded for any unambiguous indication, e.g. circling or ticking.
- Any method of setting out working should be accepted.
- Standard rules for acceptable formats of answers involving units, money, duration and time are given overleaf.

Each question on the test paper has a box beside it for the teacher to record the mark obtained. It is advisable to use these boxes so that students, and others looking at the test papers, can clearly see where the marks have been awarded.

It should also be noted that marking in red ink and using the mark boxes is an essential requirement for the Achievement tests.

General rules for alternative answers

In most places on the mark schemes acceptable and unacceptable alternative answers are given in detail, however some general rules are given overleaf and are not necessarily repeated in full for each question that they apply.

Number and Place value

The table shows various general rules in terms of acceptable decimal answers.

| Accept |
|--|
| Accept omission of leading zero if answer is clearly shown, e.g. .675 |
| Accept trailing zeros, unless the question has asked for a specific number of decimal places, e.g. 0.7000 |
| Always accept appropriate trailing zeros, e.g. 3.00m; 5.000kg |
| Accept a comma as a decimal point if that is that convention that you have taught the children, e.g. 0,638 |

Units

For questions involving quantities, e.g. length, mass, time or money, correct units must be given in the answer. The table shows acceptable and unacceptable versions of the answer 1.85m.

| | Correct answer | Also accept | Do not accept |
|---|------------------|---|---|
| Units are not given on answer line and question does not specify unit for the answer. | 1.85m | Correct conversions provided that the unit is stated, e.g. 1m 85cm 185cm 1850mm 0.00185km | 1.85 185m |
| If the unit is given on the answer line, e.g.m |1.85..... m | Correct conversions, provided the unit is stated unambiguously, e.g.185cm..... m |185.....m1850.... m etc. |
| If the question states the unit that the answer should be given in a specified unit, e.g. "Give your answer in metres" | 1.85m | 1.85 1m 85cm | 185; 1850 Any conversions to other units, e.g. 185cm |

Note: if the answer line is left blank but the correct answer is given elsewhere on the page, it can be marked correct if the units match those on the answer line or are unambiguously stated.

Money

For questions involving money, it is essential that appropriate units are given in the answer.

The table shows acceptable and unacceptable versions.

| | Accept | Do not accept |
|--|---|--|
| If the amount is in dollars and cents, the answer should be given to two decimal places. | \$0.30 \$9 or \$9.00 | |
| If units are not given on answer line | Any unambiguous indication of the correct amount, e.g. 30 cents; 30 c \$0.30; \$0.30c; \$0.30cents \$0-30; \$0=30; \$0:30 | 30 or 0.30 without a unit Incorrect or ambiguous answers, e.g. \$0.3; \$30; \$30cents; 0.30cents |
| If \$ is shown on the answer line | \$..... 0.30 \$..... 0.30 cents Accept all unambiguous indications, as shown above | \$..... 30 \$..... 30 cents (this cannot be accepted because it is ambiguous, but if the dollar sign is deleted it becomes acceptable) |
| If cents is shown on the answer line | 30cents \$0.30cents | 0.30cents \$30cents |

Duration


Accept any unambiguous method of showing duration and all reasonable abbreviations of hours (h, hr, hrs), minutes (m, min, mins) and seconds (s, sec, secs).

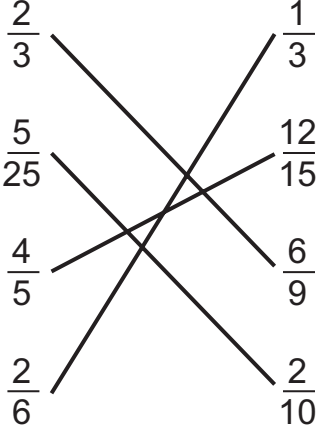
| Accept | Do not accept |
|--|---|
| Any unambiguous indication using any reasonable abbreviations of hours (h, hr, hrs), minutes (m, min, mins) and seconds (s, sec, secs), e.g. 2 hours 30 minutes; 2h 30m; 02h 30m 5 min 24 sec; 00h 05m 24s | Incorrect or ambiguous formats, e.g. 2.30; 2.3; 2.30 hours; 2.30 min; 2h 3; 2.3h |
| Any correct conversion with appropriate units, e.g. 2.5 hours; 150 mins 324 seconds | 2.5; 150 304 |
| Also accept unambiguous digital stopwatch format, e.g. 02:30:00 00:05:24; 05:24s | Do not accept ambiguous indications, e.g. 02:30 5.24 |

Time

There are many ways to write times, in both numbers and words, and marks should be awarded for any unambiguous method. Accept time written in numbers or words unless there is a specific instruction in the question. Some examples are given in the table.

| Accept | Do not accept |
|--|--|
| <p>Any unambiguous indication of correct answer in numbers, words or a combination of the two, e.g. 07:30, 19:00</p> <p>0730; 07 30; 07.30; 07,30; 07-30; 7.30; 730 a.m.; 7.30am; 7.30 in the morning</p> <p>Half past seven (o'clock) in the morning Thirty minutes past seven am Also accept: O-seven-thirty</p> <p>1900; 19 00; 19_00 etc.</p> <p>Nineteen hundred (hours) Seven o'clock in the afternoon/evening</p> <p>Accept correct conversion to 12-hour clock, e.g. 16:42 4:42 p.m.</p> <p>Sixteen forty two Four-forty-two in the afternoon/evening Four forty two p.m. Forty two (minutes) past four p.m. Eighteen (minutes) to five in the evening</p> <p>Also accept a combination of numbers and words, e.g. 18 minutes to 5 p.m. 42 minutes past 4 in the afternoon</p> | <p>Incorrect or ambiguous formats, e.g.</p> <p>07.3; 073; 07 3; 730; 73; 7.3; 7.3am; 7.30p.m</p> <p>19; 190; 19 000; 19.00am; 7.00am</p> <p>4.42am; 0442; 4.42</p> <p>Forty two (minutes) past sixteen Eighteen (minutes) to seventeen</p> |


| Question | Mark | Answer | Additional information | |
|----------|-------|--------|--|--|
| 1 | 4Nn14 | 1 |  | |

| Question | Mark | Answer | Additional information | |
|----------|-------|--------|---|--|
| 2 | 3Nn13 | 2 |  | <p>All four lines correct - award 2 marks</p> <p>Two or three lines correct - 1 mark</p> |

| Question | Mark | Answer | Additional information | |
|----------|-------|--------|------------------------|--|
| 3 | 2Nc15 | 1 | 12 | |

| Question | Mark | Answer | Additional information | | |
|----------|------|--------|------------------------|------------------------------------|--|
| 4 | a | 3P8 | 1 | 47 cents (accept \$0.47) | Do not award marks if correct currency is not indicated. |
| | b | 3P8 | 1 | \$1.53 (accept 1 dollar 53 cents.) | Accept if: 4(b) = \$2.00 – 4(a) |

| Question | Mark | Answer | Additional information | | |
|----------|------|--------|------------------------|----|--|
| 5 | a | 3D1 | 1 | 20 | |
| | b | 3D1 | 1 | 6 | |

| Question | Mark | Answer | Additional information | |
|----------|------|--------|--|--------------------------------------|
| 6 | 3Ss1 | 1 |  | All four must be correct. No errors. |

| Question | Mark | Answer | Additional information |
|-----------|------|--|----------------------------------|
| 7 2Sp4 | 1 | A:B East then South (accept E, S) B:C West then South (accept W, S) | 1 mark for both answers correct. |

| Question | Mark | Answer | Additional information |
|-----------|------|--|---|
| 8 2Sm6 | 1 | February, April, July, September, November | Accept answers with incorrect spelling, as long as the correct months are clearly intended. |

| Question | Mark | Answer | Additional information |
|------------|------|--------|------------------------------------|
| 9 4Nn17 | 1 | | All three matches correct = 1 mark |

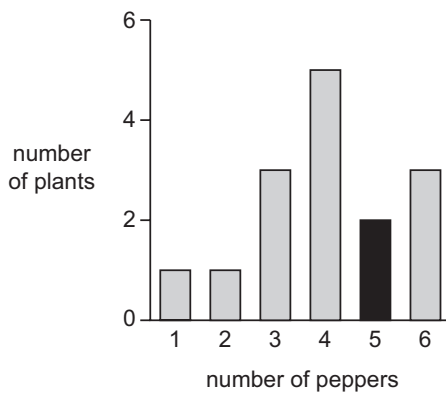
| Question | Mark | Answer | Additional information |
|--------------|------|--------|------------------------|
| 10 a 4Nn9 | 1 | -3 | |
| b 4Nn9 | 1 | -4 | |

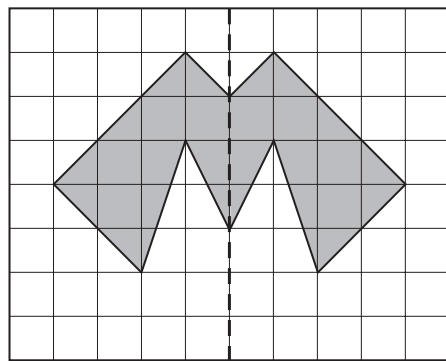
| Question | Mark | Answer | Additional information |
|--------------|------|--------|------------------------|
| 11 a 5Nc4 | 1 | 1.24 | |
| b 5Nc4 | 1 | 0.65 | |

| Question | Mark | Answer | Additional information |
|------------|------|--|------------------------|
| 12 a 5Nc11 | 1 | Working should show either $2710 + 5890 = 8600$, or $2700 + 5900 = 8600$. The mark should only be given if both the rounded numbers and the answer are given | |
| b 5Nc11 | 1 | 8599 | |

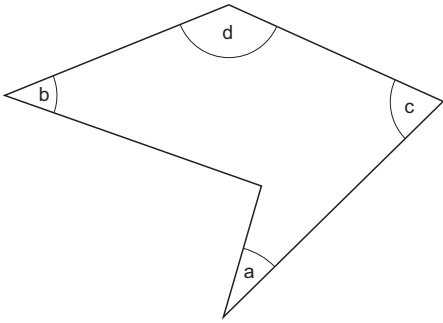
| Question | Mark | Answer | Additional information |
|----------|------|--------|--|
| 13 5P6 | 2 | 237.60 | <p>One mark for the correct answer. The second mark is for a correct method of working out, for example evidence of:</p> <p>$12 \times 22 = 264$ $264 \times 0.9 = 237.6$</p> <p>or</p> <p>$22 - 2.2 = 19.8$ $19.8 \times 12 = 237.6$</p> <p>or</p> <p>$22 \times 0.9 = 19.8$ $19.8 \times 12 = 237.6$</p> <p>or</p> <p>$12 \times 22 = 264$ $264 - 26.4 = 237.6$</p> |

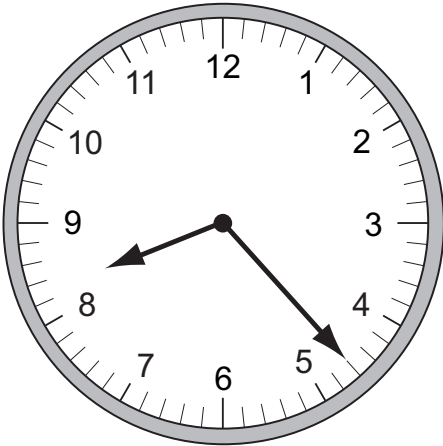
| Question | Mark | Answer | Additional information |
|----------|------|--------|------------------------|
| 14 a 5P2 | 1 | 19 | |
| b 5P2 | 1 | 3 | |

| Question | | Mark | Answer | Additional information |
|----------|-------|------|--|---|
| 15 | a 5D4 | 1 | 4 | |
| | b 5D3 | 1 | A bar shows a value of 2 in the 5 peppers column  | The bar doesn't have to be identical to the other bars as long as it clearly represents the correct answer. |

| Question | | Mark | Answer | Additional information |
|----------|------|------|---|--|
| 16 | 5Ss4 | 1 |  | The shape must be accurate enough to show that the student understands the symmetry. |

| Question | | Mark | Answer | Additional information |
|----------|--------|------|--|-------------------------------------|
| 17 | a 4Ss1 | 1 | Cuboid | Accept square or rectangular prism. |
| | b 4Ss1 | 1 | The description must mention that it has 6 equal sides. This is the only essential element of the description. | Or 6 equal angles |

| Question | Mark | Answer | Additional information |
|-------------|------|--|------------------------|
| 18 4Sp10 | 1 |  | |

| Question | Mark | Answer | Additional information |
|--------------|------|---|---|
| 19 a 4Sm7 | 1 | 6:07 | Accept 18:07 |
| b 4Sm7 | 1 |  | Accept hands drawn showing 8:22 or 8:24 |

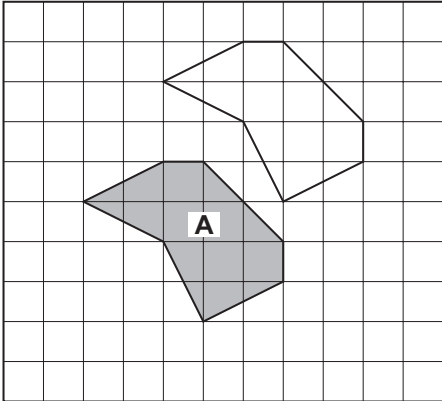
| Question | Mark | Answer | Additional information |
|-------------|------|--------|------------------------|
| 20 5Nn17 | 1 | 450 | |

| Question | Mark | Answer | Additional information |
|------------|------|--------|------------------------|
| 21 5Nc6 | 1 | 128.5 | |

| Question | Mark | Answer | Additional information |
|-----------|------|--------------------|--|
| 22 5P5 | 2 | William was wrong. | <p>The explanation should identify that there are 200 sevens in 1400, not 20.</p> $\begin{array}{r} 228 \text{ r}1 \\ 7 \overline{)1597} \\ \underline{1400} \\ 197 \\ \underline{140} \\ 57 \\ \underline{56} \\ 1 \end{array}$ <p style="margin-left: 100px;">error 200 not 20 20 8</p> <p>Thus the answer is 228 r1.</p> <p>Give one mark if the correct answer is given but no explanation of the error.</p> |

| Question | Mark | Answer | Additional information |
|-----------|------|---------------|---|
| 23 6P4 | 1 | $P = 2s + 3t$ | <p>Accept:</p> $P = 3t + 2s$ <p>or</p> $P = s + s + t + t + t$ <p>or equivalent</p> |

| Question | Mark | Answer | Additional information |
|-----------|------|---|------------------------|
| 24 6D1 | 1 | Even chance. or 50:50 or Equal chance or 50% chance or $\frac{1}{2}$ (half) | |

| Question | Mark | Answer | Additional information |
|------------|------|---|---|
| 25 5Ss5 | 1 |  | The shape must be drawn accurately enough to show that the student understands the translation. |

| Question | Mark | Answer | Additional information |
|------------|------|--------|------------------------|
| 26 5Sp2 | 1 | a, e | |

| Question | Mark | Answer | Additional information |
|------------|------|-----------------------|--|
| 27 5Sm7 | 1 | 223.2 cm ² | The correct unit cm ² must be used for the mark to be rewarded. |

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

University of Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.