



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Primary Achievement Test

MATHEMATICS

0842/02

Paper 2

May/June 2010

MARK SCHEME

Maximum Mark : 39



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 student 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 student'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 student 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 student 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 student 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 student'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.

A working marksheet, together with instructions for its completion, is included in this mark scheme. A completed copy should be despatched with the moderation sample.

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 the convention that you have taught the students, 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.m1.85..... m	Correct conversions, provided the unit is stated unambiguously, e.g.185cm..... m185.....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).

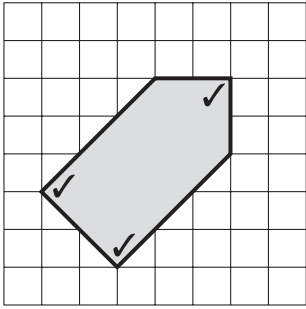
Accept	Do not accept
Any unambiguous indication using any reasonable abbreviations of hours (h, hr, hrs), minutes (m, min, mins) and seconds (s, sec, secs), e.g. 2 hours 30 minutes; 2h 30m; 02h 30m 5 min 24 sec; 00h 05m 24s	Incorrect or ambiguous formats, e.g. 2.30; 2.3; 2.30 hours; 2.30 min; 2h 3; 2.3h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

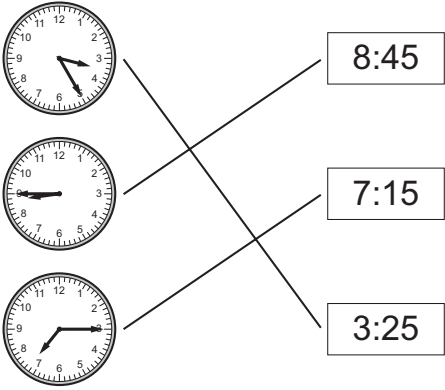
There are many ways to write times, in both numbers and words, and marks should be awarded for any unambiguous method. Accept time written in numbers or words unless there is a specific instruction in the question. Some examples are given in the table.

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		
1	3Nn4	1	<div style="display: flex; align-items: center; gap: 10px;"> 140 209 238 345 499 </div>	Both correct for 1 mark. Accept any indication.

Question	Mark	Answer		
2	3Sp3	1		All three ticked or otherwise indicated for 1 mark.

Question	Mark	Answer		
3	3Nc5	1	219	

Question	Mark	Answer		
4	3Sm9	1		All three correct for 1 mark.

Question	Mark	Answer		
5	6P1	1	<div style="display: flex; flex-direction: column; gap: 10px;"> <div style="display: flex; align-items: center; gap: 10px;"> difference + </div> <div style="display: flex; align-items: center; gap: 10px;"> product - </div> <div style="display: flex; align-items: center; gap: 10px;"> share × </div> <div style="display: flex; align-items: center; gap: 10px;"> sum ÷ </div> </div>	All 3 lines must be correct to earn the mark.

Question	Mark	Answer	
6 4Sp7	1	360 (°)	

Question	Mark	Answer	
7 a 3Nn8	1	22 (years old)	
b 3Nn8	1	2 (years old)	
c 3Nn8	1	11 (years old)	

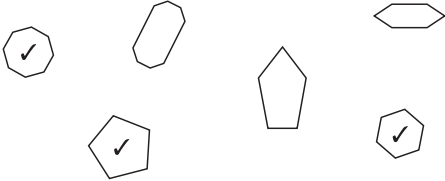
Question	Mark	Answer	
8 a 5Sm5	1	72 (mm)	Accept answer between 70 and 74.
b 5Sm5	1	Correct straight line	Accept lines which measure from 47 to 49 mm, inclusive. Lines must be drawn with a ruler and must not have any change of direction.

Question	Mark	Answer	
9 3P2	2	$\begin{array}{l} \boxed{8} \boxed{1} \times \boxed{4} = 324 \\ \boxed{5} \boxed{4} \times \boxed{6} = 324 \\ \boxed{3} \boxed{6} \times \boxed{9} = 324 \end{array}$	1 mark for each correct calculation. Maximum of 2 marks.

Question	Mark	Answer	
10 4Ss4	1	<div style="display: flex; justify-content: space-around; align-items: center;"> <input type="checkbox"/> tetrahedron <input checked="" type="checkbox"/> square pyramid <input type="checkbox"/> triangular prism <input type="checkbox"/> cone </div>	

Question		Mark	Answer										
11	5Nn23	2	<table border="1"> <thead> <tr> <th>Fraction</th> <th>Decimal</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>$\frac{1}{4}$</td> <td>0.25</td> <td>25%</td> </tr> <tr> <td>$\frac{1}{2}$</td> <td>0.5 Accept 0.50</td> <td>50%</td> </tr> </tbody> </table>	Fraction	Decimal	Percentage	$\frac{1}{4}$	0.25	25%	$\frac{1}{2}$	0.5 Accept 0.50	50%	1 mark for each correct answer. Maximum of 2 marks.
	Fraction		Decimal	Percentage									
$\frac{1}{4}$	0.25	25%											
$\frac{1}{2}$	0.5 Accept 0.50	50%											
5Nn20													

Question		Mark	Answer	
12	5Nc13	1	85	

Question		Mark	Answer	
13	4Ss3	1		All three must be indicated for 1 mark.

Question		Mark	Answer	
14	4Nc6	1	156 remainder 1	

Question		Mark	Answer	
15	a	1	(\$) 82	1 mark for each answer.
	b	1	Adult tickets = <u>3</u>	
		1	Child tickets = <u>4</u>	

Question	Mark	Answer	
16 5P6	2	(\$) 30	<p>If answer is incorrect award 1 mark for a complete correct method.</p> <p>For example, $40 - (40 \div 4) =$ wrong answer.</p> <p>Or</p> <p>1 mark for correct calculation of 25% of 40. 10 must be seen.</p>

Question	Mark	Answer	
17 5Sp6	1	110°	

Question	Mark	Answer	
18 a 6Sp1	1	$(-4, 2)$	
b 6Sp1	1	$(2, -3)$	

Question	Mark	Answer	
19 6Nc2	1	$3 \times (5 + 2) \times 4 = 84$	

Question	Mark	Answer	
20 6Sm7	1	<p>The time in New Mexico is 4 pm.</p> <p>The time in Oregon is 3 pm.</p>	Both sentences must be correct to earn the mark.

Question	Mark	Answer	
21 6Nn9	1	2, 3, 7	<p>Accept $2 \times 3 \times 7$ in any order</p> <p>All numbers must be given for 1 mark.</p> <p>Accept in any order.</p>

Question	Mark	Answer	
22 6Nn11	1	$\frac{1}{3}$	

Question	Mark	Answer	
23 a 6D5	1	3	
b 6D4	1	1	

Question	Mark	Answer	
24 6Nn15	1	4.534 4.345 3.544 3.454	All in correct order for 1 mark.

Question	Mark	Answer	
25 5P6	3	(\$) 40	<p>If final answer incorrect, award marks as follows:</p> <p>Award 2 mark for evidence of both 5 and 10</p> <p>Award 1 mark for evidence of either 5 or 10</p> <p>Award 1 mark for evidence of 25 + 5 + 10 = correct answer, where one of 5 or 10 is incorrect</p>

Question	Mark	Answer	
26 6P6	1	7.2	

Question	Mark	Answer	
27 6Nc1	1	<p>All six cards used once, in any order to correctly make a sum of 4.71.</p> <p>For example,</p> $ \begin{array}{r} \boxed{3} \cdot \boxed{2} \boxed{5} \\ + \\ \boxed{1} \cdot \boxed{4} \boxed{6} \\ \hline 4 \cdot 7 \quad 1 \end{array} $	Do not accept cards used more than once or numbers other than those given.

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A. INSTRUCTIONS FOR COMPLETING WORKING MARK SHEET

1. Complete the information at the head of the form.
2. List the candidates in an order which will allow ease of transfer of information to a computer-printed mark sheet (MS1) at a later stage (i.e. in candidate index number order, where this is known).
3. Enter each candidate's marks on this form as follows:
 - a) In the question columns, enter the marks awarded.
 - b) In the columns headed 'Total Mark', enter the total mark awarded.
4. Ensure that the addition of marks is independently checked.
5. Both the teacher completing this form and the internal moderator should check the form and complete the bottom portion.

B. PROCEDURES FOR EXTERNAL MODERATION

1. University of Cambridge International Examinations (CIE) sends a computer-printed mark sheet (MS1) to each centre showing the name and index number of each candidate. Transfer the total internally moderated mark for each candidate from this WORKING MARK SHEET to the computer-printed mark sheet (MS1).
2. Despatch the top copy of the computer-printed mark sheet (MS1) to CIE. The deadlines for receipt of this completed document are 15 June for the June examination and 16 November for the November examination.
3. Send samples of the candidates' work covering the full ability range, together with this form and the second copy of MS1, by 15 June for the June examination and 16 November for the November examination.
4. If there are 10 or fewer candidates entering the Achievement Test, send all the scripts for every candidate.
5. If there are more than 10 candidates, send the scripts that contributed to the final mark for the number of candidates as follows. The marks of the candidates' work selected should cover the whole mark range with marks spaced as evenly as possible from the top mark to the lowest mark.

number of candidates entered	number of candidates whose work is required
11-50	10
51-100	15
above 100	20

6. If different teachers have prepared classes, select the samples from the classes of different teachers.
7. CIE reserves the right to ask for further samples of scripts.

