



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Primary Achievement Test

MATHEMATICS

0842/02

Paper 2

October/November 2009

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 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 that convention that you have taught the student, 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; 150 304
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

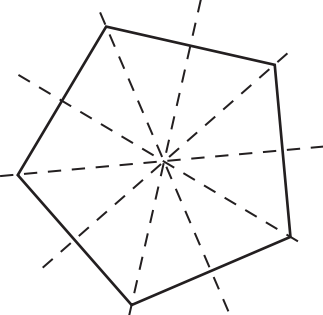
There are many ways to write times, in both numbers and words, and marks should be awarded for any unambiguous method. Accept time written in numbers or words unless there is a specific instruction in the question. Some examples are given in the table.

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	
1	3Nn9	1	3 8 38 83

Question	Mark	Answer	
2	3Nn13	1	$\frac{3}{4}$ or equivalent Also accept 0.75

Question	Mark	Answer	
3	3Nn3	1	317

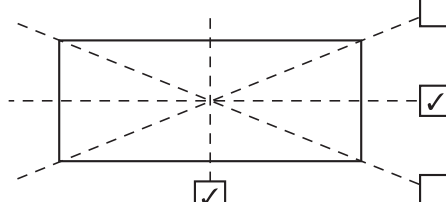
Question	Mark	Answer		
4a	3Ss1	1	Pentagon Also accept regular pentagon	
b	3Ss3	1	 <p>Any one clearly drawn accurate line.</p>	<p>Allow mark if no ruler is used, provided intention is clear.</p> <p>Allow mark if more than one correct line is drawn.</p>

Question	Mark	Answer	
5	4Nn8	1	-4 (°C)

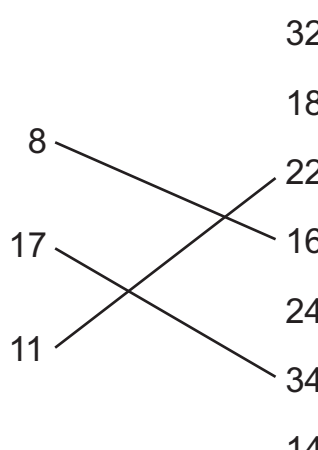
Question	Mark	Answer	
6	3P1	1	9

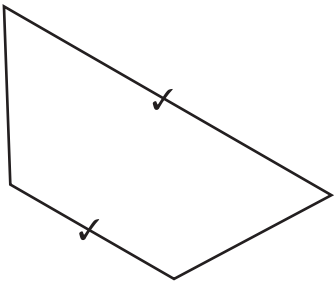
Question	Mark	Answer	
7	4Sp9	1	45 (°)

Question	Mark	Answer	
8	3Sm6	1	minutes
			Accept any indication of minutes for 1 mark. Also accept seconds.

Question	Mark	Answer	
9	3Ss3	1	
			Both lines must be ticked to earn the mark.

Question	Mark	Answer	
10	3Nc8	1	3 (sweets)

Question	Mark	Answer	
11	3Nc12	1	
			All 3 lines must be correct to get the mark.

Question	Mark	Answer		
12	5Sp2	1		Accept any indication of these two lines for 1 mark.

Question	Mark	Answer		
13a	4D5	1	14	
b	4D5	1	5	

Question	Mark	Answer		
14	3Sm8	1	Accept any of the following: 24 ^(th) April April 24 ^(th) 24/4 4/24	

Question	Mark	Answer		
15a	5P2	1	Double (each number) or multiply by 2	Accept explanation in symbols for example x2
b	5P2	1	256	

Question	Mark	Answer		
16	5Nn1	1	Seven hundred and one thousand eight hundred and fifty.	Accept any reasonable spelling

Question	Mark	Answer	
17a 6D4	1	3	
b 6D4	1	5	
c 6D5	1	3.5	

Question	Mark	Answer	
18 5P6	4	14	<p>Award full marks for correct answer.</p> <p>If final answer incorrect, award marks as follows:</p> <p>Award 3 marks for evidence of 16, including 30 – 16 seen.</p> <p>Award 2 marks for evidence of both 6 and 10</p> <p>Award 1 mark for evidence of either 6 or 10</p> <p>Award 1 mark for evidence of 6 + 10 = correct answer, where one of 6 or 10 is incorrect.</p>

Question	Mark	Answer	
19 5Nc3	1	1000 1500 2500	All three correct for 1 mark

Question	Mark	Answer	
20 6Ss4	1		

Question	Mark	Answer		
21	5Nc6	1	30	

Question	Mark	Answer		
22	6Sp3	1	Angle should measure 74-76° inclusive.	Accept correct angle drawn elsewhere.

Question	Mark	Answer		
23	6Nn9	2	$2 \times 2 \times 3 \times 5$ or $2^2 \times 3 \times 5$	Also accept 2,2,3,5 or $2^2, 3, 5$ Numbers may be multiplied or listed in any order. Award 1 mark for any 3 correct prime factors given.

Question	Mark	Answer		
24	6P4	1	$b = 4a + 3$ Also accept: $3 + 4a$ $4 \times a + 3$ $3 + 4 \times a$ $a \times 4 + 3$ $3 + a \times 4$	Although not normal convention accept $a4 + 3$ or $3 + a4$ Any correct use of brackets acceptable.

Question	Mark	Answer		
25	6Nc10	2	$7 - 3 \times 12 = 48$ $21 + 4 - 7 \div 6 = 3$	Award 1 mark for each correct inverse calculation. Accept correct use of brackets.

Question		Mark	Answer	
26	6Sm6	3	Perimeter 74 (cm) Area 138 (cm ²)	For the area if final answer is incorrect award 1 mark for evidence of a correct complete method. For example $(9 \times 6) + (9 \times 6) + (10 \times 3)$ or $(6 \times 6) + (6 \times 6) + (22 \times 3)$

Question		Mark	Answer						
27	6P1	1	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>2</td><td>1</td></tr> </table> × <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>5</td><td>0</td><td>0</td></tr> </table> = 10500	2	1	5	0	0	All digits correct for 1 mark.
2	1								
5	0	0							

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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.

