

**Ma**

KEY STAGE

**2**

LEVELS

**3–5**

Mathematics tests

## Mark schemes

Test A, Test B and  
Mental mathematics



National curriculum assessments

**2007**

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# Marking the mathematics tests

As in 2006, external markers, employed by the external marking agencies under contract to QCA, will mark the test papers. The markers will follow the mark schemes in this booklet, which is supplied to teachers for information.

This booklet contains the mark schemes for the levels 3–5 tests A, B and mental mathematics. Level threshold tables will be available on the NAA website ([www.naa.org.uk/tests](http://www.naa.org.uk/tests)) on 25 June 2007.

## General guidance

### *The structure of the mark schemes*

The marking information for each question is set out in the form of tables, which start on page 6 of this booklet. The ‘question’ column on the left-hand side of each table provides a quick reference to the question number and the question part. The ‘mark’ column indicates the total number of marks available for each question part. On some occasions the symbol (U1) may be shown in the mark column. The ‘U’ indicates that there is a *Using and applying mathematics* element in the question. The number, 1, shows the number of marks attributed to using and applying mathematics in this question.

The ‘requirement’ column may include two types of information:

- a statement of the requirements for the award of each mark, with an indication of whether credit can be given for correct working
- examples of some different types of correct response.

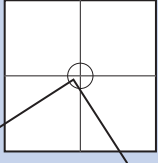
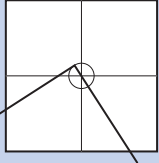
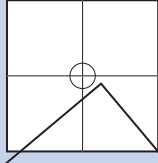
The ‘additional guidance’ column indicates alternative acceptable responses, and provides details of specific types of response which are unacceptable. Other guidance, such as the range of acceptable answers, is provided as necessary.

Additionally, for the mental mathematics test, general guidance on marking is given on page 16, together with a ‘quick reference’ mark scheme.

### *Applying the mark schemes*

In order to ensure consistency of marking, the most frequent procedural queries are listed on pages 2 and 3 with the action the marker will take. This is followed by further guidance on pages 4 and 5 relating to the marking of questions that involve money, time and other measures. Unless otherwise specified in the mark scheme, markers will apply the following guidelines in all cases.

<b>What if ...</b>	<b>Marking procedure</b>	
The pupil's response is numerically or algebraically equivalent to the answer in the mark scheme.	Markers will award the mark unless the mark scheme states otherwise.	
The pupil's response does not match closely any of the examples given.	Markers will use their judgement in deciding whether the response corresponds with the statement of the requirements given in the 'requirement' column. Reference will also be made to the additional guidance and, if there is still uncertainty, markers will contact the supervising marker.	
The pupil has responded in a non-standard way.	Calculations, formulae and written responses do not have to be set out in any particular format. Pupils may provide evidence in any form as long as its meaning can be understood. Diagrams, symbols or words are acceptable for explanations or for indicating a response. Any correct method of setting out working, however idiosyncratic, will be accepted.	
There appears to be a misreading affecting the working.	<p>This is when the pupil misreads the information given in the question and uses different information without altering the original intention or difficulty level of the question. For each misread that occurs, one mark only will be deducted.</p> <p>In one-mark questions – 0 marks are awarded.</p> <p>In two-mark questions that have a method mark – 1 mark will be awarded if the correct method is correctly implemented with the misread number.</p>	
No answer is given in the expected place, but the correct answer is given elsewhere.	Where a pupil has shown understanding of the question, the mark(s) will be given. In particular, where a word or number response is expected, a pupil may meet the requirement by annotating a graph or labelling a diagram elsewhere in the question.	
The response in the answer box is wrong, but the correct answer is shown in the working.	<p>Where appropriate, detailed guidance will be given in the mark scheme, which markers will follow. If no guidance is given, markers will examine each case to decide whether:</p> <ul style="list-style-type: none"> <li>■ the incorrect answer is due to a transcription error</li> <li>■ the pupil has continued to give redundant extra working which does not contradict work already done</li> <li>■ the pupil has continued to give redundant extra working which does contradict work already done.</li> </ul>	<p>If so, the mark <b>will</b> be awarded.</p> <p>If so, the mark <b>will</b> be awarded.</p> <p>If so, the mark <b>will not</b> be awarded.</p>

<b>What if ...</b>	<b>Marking procedure</b>
The pupil's answer is correct but the wrong working is shown.	A correct response will always be marked as correct.
The correct response has been crossed out and not replaced.	Any legible crossed-out work that has not been replaced will be marked according to the mark scheme. If the work is replaced, then crossed-out work will not be considered.
More than one answer is given.	If all answers are correct (or a range of answers is given, all of which are correct), the mark will be awarded unless prohibited by the mark scheme. If both correct and incorrect responses are given, no mark will be awarded.
The answer is correct but, in a later part of the question, the pupil has contradicted this response.	A mark given for one part will not be disallowed for working or answers given in a different part, unless the mark scheme specifically states otherwise.
The pupil has drawn lines which do not meet at the correct point.	<p>Markers will interpret the phrase 'slight inaccuracies in drawing' to mean 'within or on a circle of radius 2mm with centre at the correct point'.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>within the circle accepted</p> </div> <div style="text-align: center;">  <p>on the circle accepted</p> </div> <div style="text-align: center;">  <p>outside the circle <b>not</b> accepted</p> </div> </div>

### **Recording marks awarded on the test paper**

All questions, even those not attempted by the pupil, will be marked with a '1' or '0' entered in each marking space.

A two-mark question which is correct will have '1' entered in both marking spaces. A two-mark question which is incorrect, but which has sufficient evidence of working or method as required by the mark scheme, will have '1' entered in the first marking space and '0' in the second. Otherwise '0' will be entered in both marking spaces.

For the written tests, the total number of marks gained on each double page will be written in the space at the bottom of the right-hand page. For all of the tests, the total number of marks gained on each paper will be recorded on the front of the test paper, and on the mark sheet.

Test A carries a total of 40 marks. Test B also carries a total of 40 marks. The mental mathematics test carries a total of 20 marks.

The 2007 key stage 2 mathematics tests and mark schemes were developed by the Test Development Team at Edexcel on behalf of QCA.

## Marking specific types of question – summary of additional guidance

### Responses involving money

	Accept	Do not accept
<p><b>Where the £ sign is given</b></p> <p>for example: £3.20, £7</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">£</div>	<p>£3.20            £7                          £7.00</p> <p>Any unambiguous indication of the correct amount, eg</p> <p>£3.20p £3 20 pence £3 20 £3,20 £3-20 £3:20</p>	<p>Incorrect placement of pounds or pence, eg</p> <p>£320 £320p</p> <p>Incorrect placement of decimal point, or incorrect use or omission of 0, eg</p> <p>£3.2 £3 200 £32 0 £3-2-0</p>
<p><b>Where the p sign is given</b></p> <p>for example: 40p</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">p</div>	<p>40p</p> <p>Any unambiguous indication of the correct amount, eg</p> <p>£0.40p</p>	<p>Incorrect or ambiguous use of pounds or pence, eg</p> <p>0.40p £40p</p>
<p><b>Where no sign is given</b></p> <p>for example: £3.20, 40p</p> <div style="border: 1px solid black; width: 100px; height: 30px; margin: 10px auto;"></div>	<p>£3.20            40p 320p            £0.40</p> <p>Any unambiguous indication of the correct amount, eg</p> <p>£3.20p            £0.40p £3 20 pence      £.40p £3 20                £.40 £3,20                40 £3-20                0.40 £3:20 3.20 320 3 pounds 20</p>	<p>Incorrect or ambiguous use of pounds or pence, eg</p> <p>£320                £40 £320p              £40p £3.2                0.4 3.20p                0.40p</p>

### Responses involving time

	Accept	Do not accept
<p><b>A time interval</b></p> <p>for example: 2 hours 30 minutes</p>	<p>2 hours 30 minutes</p> <p>Any unambiguous, correct indication, eg</p> <p>2½ hours</p> <p>2.5 hours</p> <p>2h 30</p> <p>2h 30 min</p> <p>2 30</p> <p>150 minutes</p> <p>150</p> <p>Digital electronic time, ie</p> <p>2:30</p>	<p>Incorrect or ambiguous time interval, eg</p> <p>2.30</p> <p>2-30</p> <p>2,30</p> <p>230</p> <p>2.3</p> <p>2.3 hours</p> <p>2.3h</p> <p>2h 3</p> <p>2.30 min</p>
<p><b>A specific time</b></p> <p>for example: 8:40am, 17:20</p>	<p>8:40am</p> <p>8:40</p> <p>twenty to nine</p> <p>Any unambiguous, correct indication, eg</p> <p>08.40</p> <p>8.40</p> <p>0840</p> <p>8 40</p> <p>8-40</p> <p>8,40</p> <p>Unambiguous change to 12 or 24 hour clock, eg</p> <p>17:20 as 5:20pm or 17:20pm</p>	<p>Incorrect time, eg</p> <p>8.4am</p> <p>8.40pm</p> <p>Incorrect placement of separators, spaces, etc or incorrect use or omission of 0, eg</p> <p>840</p> <p>8:4:0</p> <p>8.4</p> <p>084</p> <p>84</p>

### Responses involving measures

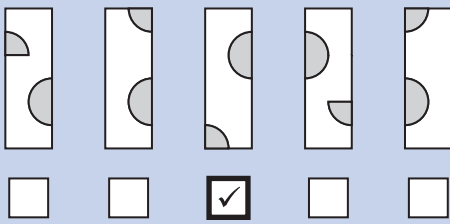


	Accept	Do not accept
<p><b>Where units are given</b> (eg kg, m, l)</p> <p>for example: 8.6kg</p> <div style="border: 1px solid black; display: inline-block; padding: 2px 10px; margin-top: 10px;">kg</div>	<p>8.6kg</p> <p>Any unambiguous indication of the correct measurement, eg</p> <p>8.60kg</p> <p>8.6000kg</p> <p>8kg 600g</p>	<p>Incorrect or ambiguous use of units, eg</p> <p>8600kg</p>

#### Note

If a pupil leaves the answer box empty but writes the answer elsewhere on the page, then that answer must be consistent with the units given in the answer box and the conditions listed above.

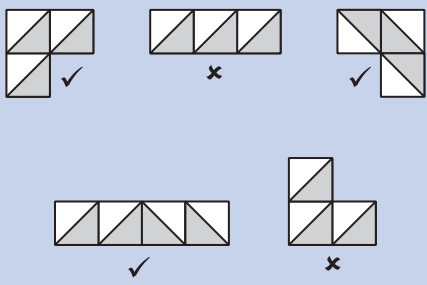
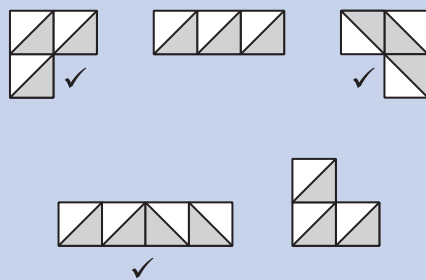
If a pupil changes the unit given in the answer box, then their answer must be equivalent to the correct answer using the unit they have chosen, unless otherwise indicated in the mark scheme.

### Test A questions 1–8

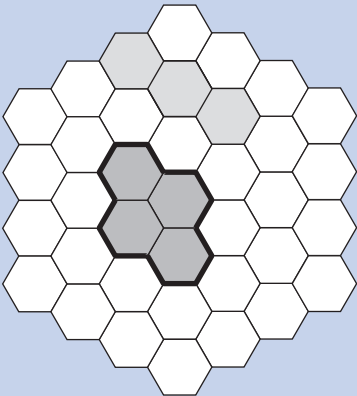
Question	Requirement	Mark	Additional guidance
<b>1a</b>	15	<b>1m</b>	
<b>1b</b>	50	<b>1m</b>	
<b>2</b>	One of the following triples: 150, 400, 450      450, 400, 150 250, 400, 350      350, 400, 250 350, 200, 450      450, 200, 350	<b>1m</b>	Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.
<b>3</b>	One pattern ticked as shown: 	<b>1m</b>	Accept alternative unambiguous indications of the correct pattern, eg pattern circled.
<b>4</b>	70	<b>1m</b>	
<b>5</b>	Three numbers circled as shown: 	<b>1m</b> 	<b>Do not</b> award the mark if additional incorrect numbers are circled. Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.
<b>6a</b>	£15	<b>1m</b>	
<b>6b</b>	Award <b>TWO</b> marks for the correct answer of £12  If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate working, eg $11.50 + 16.50 = 28$ $40 - 28 = \text{wrong answer}$	<b>Up to 2m</b>	Accept for <b>ONE</b> mark £1200 <b>OR</b> £1200p as evidence of appropriate working.  Working must be carried through to reach an answer for the award of <b>ONE</b> mark.
<b>7a</b>	5	<b>1m</b>	
<b>7b</b>	Answer in the range 33km to 37km inclusive.	<b>1m</b>	
<b>8a</b>	10:45am	<b>1m</b>	The answer is a specific time (see page 5 for guidance).
<b>8b</b>	1:15pm	<b>1m</b>	The answer is a specific time (see page 5 for guidance).



### Test A questions 9–13

Question	Requirement	Mark	Additional guidance
9	<p>Award <b>TWO</b> marks for the correct answer of 55p <b>OR</b> £0.55</p> <p>If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate working, eg</p> $8.75 - 7.65 = 1.10$ $1.10 \div 2 = \text{wrong answer}$	<b>Up to 2m</b>	<p>Accept for <b>ONE</b> mark £55 <b>OR</b> £55p <b>OR</b> 0.55p as evidence of appropriate working.</p> <p>Working must be carried through to reach an answer for the award of <b>ONE</b> mark.</p>
10a	May <b>AND</b> October	<b>1m</b>	<p>Answers may be given in either order.</p> <p>Accept unambiguous abbreviations or recognisable misspellings.</p>
10b	4	<b>1m</b>	<b>Do not</b> accept a list of months.
10c	7	<b>1m</b>	
11	340	<b>1m</b>	
12	<p>Award <b>TWO</b> marks for diagrams ticked or crossed as shown:</p>  <p>If the answer is incorrect, award <b>ONE</b> mark for any four diagrams ticked or crossed correctly.</p>	<b>Up to 2m</b>	<p>Accept alternative unambiguous indications such as <b>Y</b> or <b>N</b>.</p> <p>For <b>TWO</b> marks accept:</p> 
13	18	<b>1m</b>	Accept -18

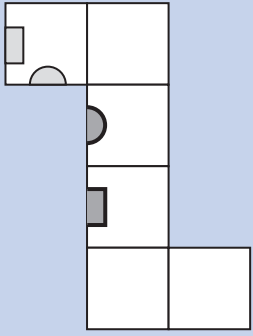

### Test A questions 14–18

Question	Requirement	Mark	Additional guidance
14	Shape drawn on grid as shown: 	1m	Accept shape in any position or orientation.  Accept slight inaccuracies in drawing provided the intention is clear.  Accept alternative unambiguous indications of the correct shape provided the intention is clear.  Accept mathematically correct answers involving fractions of a hexagon.  Shape need not be shaded.
15a	A multiple of 12 which ends in '8', eg 48 <b>OR</b> 108 <b>OR</b> 168 <b>OR</b> 228 <b>OR</b> 288	1m	
15b	An explanation which recognises that an odd number cannot be a multiple of 4, eg: <ul style="list-style-type: none"> <li>■ 'A multiple of 4 cannot be odd'</li> <li>■ 'All multiples of 4 are even'</li> <li>■ 'An odd number cannot be a multiple of 4'</li> <li>■ 'Multiples of 4 must end in 0, 2, 4, 6 or 8'</li> <li>■ '4, 8, 12, 16, 20, 24 don't end in 3'.</li> </ul>	1m (U1)	<b>Do not</b> accept vague or incomplete explanations, eg: <ul style="list-style-type: none"> <li>■ '3 is not a multiple of 4'</li> <li>■ '3 is too small'</li> <li>■ '4 is even and 3 is an odd number'</li> <li>■ '13, 23, 33 and 43 are not multiples of 4'</li> <li>■ 'A number which ends in 3 cannot be a multiple of 4'</li> <li>■ '3 isn't in the 4 times table'</li> <li>■ '4 doesn't go into any number that ends in 3'.</li> </ul>
16	Two numbers circled as shown: 0.5 (0.8) 0.23 0.09 (0.67)	1m	<b>Do not</b> award the mark if additional incorrect numbers are circled.  Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.
17	A <b>AND</b> C	1m	Answers may be given in either order.
18	Award <b>TWO</b> marks for the correct answer of 75p  If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate working, eg $£1.45 - £1.10 = 35p$ $£1.10 - 35p = \text{wrong answer}$ <b>OR</b> $£1.10 \times 2 = £2.20$ $£2.20 - £1.45 = \text{wrong answer}$	Up to 2m (U1)	Accept for <b>ONE</b> mark 0.75p <b>OR</b> £75 as evidence of appropriate working.  Working must be carried through to reach an answer for the award of <b>ONE</b> mark.

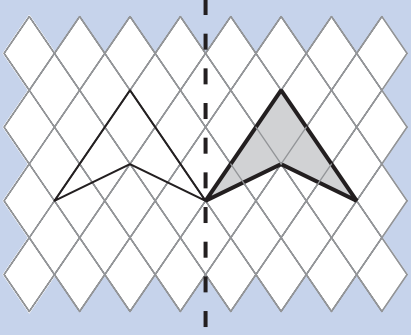
## Test A questions 19–21

Question	Requirement	Mark	Additional guidance																														
<b>19</b>	<p>Award <b>TWO</b> marks for four rows ticked correctly, as shown:</p> <table style="margin-left: 20px;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; text-align: center; vertical-align: middle;">✓</td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; text-align: center; vertical-align: middle;">✓</td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; text-align: center; vertical-align: middle;">✓</td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> </tr> <tr> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></td> <td style="width: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; text-align: center; vertical-align: middle;">✓</td> </tr> </table> <p>If the answer is incorrect, award <b>ONE</b> mark for three rows ticked correctly.</p>			✓	✓			✓					✓	<b>Up to 2m</b>	<p><i>Accept alternative unambiguous indications such as ✕ or Y.</i></p>																		
		✓																															
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		✓																															
<b>20</b>	<p>Award <b>TWO</b> marks for the correct answer of 24</p> <p>If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate working which contains no more than <b>ONE</b> arithmetical error, eg</p> <ul style="list-style-type: none"> <li>■ repeated addition / subtraction methods, eg           <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="text-align: right; padding-right: 10px;">504</td> <td></td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">-210</td> <td style="padding-left: 20px;">10 × 21</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right; padding-right: 10px;">294</td> <td></td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">-210</td> <td style="padding-left: 20px;">10 × 21</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right; padding-right: 10px;">84</td> <td></td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">-84</td> <td style="padding-left: 20px;">4 × 21</td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right; padding-right: 10px;">0</td> <td style="padding-left: 20px;">wrong answer</td> </tr> </table> </li> <li>■ factor / multiple methods, eg           <p style="margin-left: 20px;">504 ÷ 3 = 168</p> <p style="margin-left: 20px;">168 ÷ 7 = wrong answer</p> </li> <li>■ long division algorithm           <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="text-align: right; padding-right: 10px;">wrong answer</td> <td></td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">21)504</td> <td style="border-top: 1px solid black; padding-left: 10px;"></td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">420</td> <td style="padding-left: 10px;"></td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right; padding-right: 10px;">84</td> <td></td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">-84</td> <td style="padding-left: 10px;"></td> </tr> <tr> <td style="border-top: 1px solid black; text-align: right; padding-right: 10px;">0</td> <td></td> </tr> </table> </li> <li>■ short division algorithm           <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="text-align: right; padding-right: 10px;">wrong answer</td> <td></td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">21)504</td> <td style="border-top: 1px solid black; padding-left: 10px;"></td> </tr> </table> </li> </ul>	504		-210	10 × 21	294		-210	10 × 21	84		-84	4 × 21	0	wrong answer	wrong answer		21)504		420		84		-84		0		wrong answer		21)504		<b>Up to 2m</b>	<p><i>In all cases accept follow through of <b>ONE</b> error in working.</i></p> <p><i>Working must be carried through to reach an answer for the award of <b>ONE</b> mark.</i></p> <p><i><b>Do not</b> award any marks if the final answer is missing.</i></p> <p><i>Variations on algorithms are acceptable, provided they represent a viable and complete method.</i></p> <p><i><b>No mark</b> is awarded for repeated addition / subtraction the wrong number of times.</i></p> <p style="margin-top: 20px;"><i>Short division methods must be supported by evidence of appropriate carrying figures to indicate use of a division algorithm.</i></p>
504																																	
-210	10 × 21																																
294																																	
-210	10 × 21																																
84																																	
-84	4 × 21																																
0	wrong answer																																
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21)504																																	
420																																	
84																																	
-84																																	
0																																	
wrong answer																																	
21)504																																	
<b>21</b>	<p>Award <b>TWO</b> marks for the correct answer of 75</p> <p>If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate working, eg</p> <p style="margin-left: 20px;">50 ÷ 2 × 3 = wrong answer</p>	<b>Up to 2m</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px; display: inline-block;">U1</span>	<p><i>Working must be carried through to reach an answer for the award of <b>ONE</b> mark.</i></p>																														

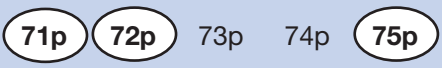
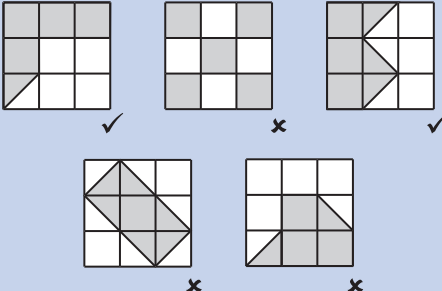
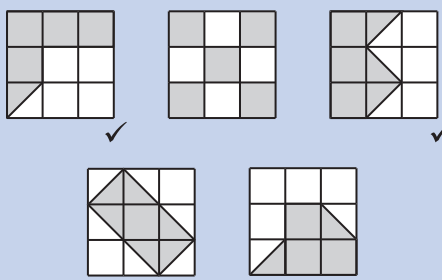

Test A questions 22–25

Question	Requirement	Mark	Additional guidance												
22	<p>Diagram completed as shown:</p> 	1m	<p>Accept inaccuracies in drawing provided the intention is clear.</p> <p>Shapes need not be shaded.</p>												
23	<p>Award <b>TWO</b> marks for three rows ticked correctly as shown:</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> <p>If the answer is incorrect, award <b>ONE</b> mark for any two rows ticked correctly.</p>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Up to 2m	<p>Accept alternative unambiguous indications such as <b>x</b> or <b>Y</b>.</p>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
24	<p>Two numbers circled as shown:</p> <p style="text-align: center;">1.1    <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">1.4</span>    <span style="border: 1px solid black; border-radius: 50%; padding: 2px;"><math>1\frac{1}{3}</math></span>    <math>1\frac{1}{5}</math></p>	1m	<p><b>Do not</b> award the mark if additional incorrect numbers are circled.</p> <p>Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.</p>												
25	<p>An explanation (or diagram) which recognises that the sum of two obtuse angles would be greater than 180 degrees, eg:</p> <ul style="list-style-type: none"> <li>■ 'An obtuse angle is greater than 90 degrees and the angles of a triangle add up to 180 degrees'</li> <li>■ 'Two obtuse angles add up to more than 180'</li> <li>■ '180 degrees is less than two obtuse angles'</li> <li>■ 'It must have at least two acute angles'</li> <li>■ 'The shape would need more than 3 sides to join up'</li> </ul> 	<p>1m</p> <p style="text-align: center;"><span style="border: 1px solid black; border-radius: 50%; padding: 2px;">U1</span></p>	<p><b>Do not</b> accept answers that refer only to the properties of obtuse angles <b>OR</b> to the angles of a triangle, eg:</p> <ul style="list-style-type: none"> <li>■ 'The angles of a triangle add up to 180 degrees'</li> <li>■ 'Obtuse angles are greater than 90 degrees'.</li> </ul> <p><b>Do not</b> accept vague or incomplete explanations, eg:</p> <ul style="list-style-type: none"> <li>■ 'A triangle cannot have two obtuse angles'</li> <li>■ 'Obtuse angles would be too big'</li> <li>■ 'You can only have acute angles'.</li> </ul>												

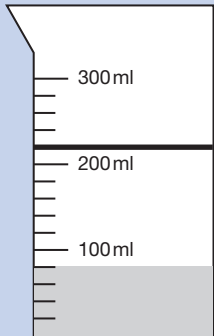
## Test B questions 1–6

Question	Requirement	Mark	Additional guidance					
<b>1</b>	One number circled as shown: 261 <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">246</span> 255 209 275	<b>1m</b>	<p><b>Do not</b> award the mark if additional incorrect numbers are circled.</p> <p>Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.</p>					
<b>2</b>	Diagram completed as shown:  <p style="text-align: center;">mirror line</p>	<b>1m</b>	<p>Accept slight inaccuracies in drawing (see page 3 for guidance).</p> <p>Shape need not be shaded.</p>					
<b>3</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">3</td> <td style="padding: 2px 5px;">7</td> <td style="padding: 0 5px;">+</td> <td style="padding: 2px 5px;">6</td> <td style="padding: 2px 5px;">3</td> </tr> </table>	3	7	+	6	3	<b>1m</b>	
3	7	+	6	3				
<b>4</b>	Answer in the range 5.4cm to 5.6cm inclusive.	<b>1m</b>	Accept $5\frac{1}{2}$ cm.					
<b>5a</b>	3	<b>1m</b>						
<b>5b</b>	4	<b>1m</b>						
<b>5c</b>	monkey	<b>1m</b>						
<b>6</b>	An explanation which recognises that 10:35 is after half past ten, eg: <ul style="list-style-type: none"> <li>■ '10:35am is 35 minutes from 10:00am but 25 minutes from 11:00am'</li> <li>■ '10:35 is 10 minutes closer to 11:00'</li> <li>■ 'It's closer to 60 minutes'</li> <li>■ '10:35am is after half past'</li> <li>■ 'It's past halfway'</li> <li>■ '35 is after 30 and 30 is half'</li> <li>■ '35 minutes is over half an hour'</li> <li>■ 'It's 25 minutes to 11'.</li> </ul>	<b>1m</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">U1</span>	<p><b>Do not</b> accept vague or incomplete explanations, eg:</p> <ul style="list-style-type: none"> <li>■ '11:00am is closer'</li> <li>■ 'Halfway is 10.30am'</li> <li>■ '5 rounds up'</li> <li>■ 'There are 60 minutes in an hour'.</li> </ul>					

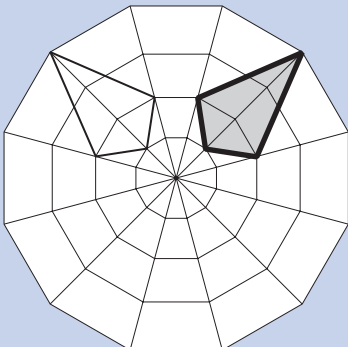
### Test B questions 7–12

Question	Requirement	Mark	Additional guidance
<b>7</b>	Three amounts circled as shown: 	<b>1m</b> U1	<p><b>Do not</b> award the mark if additional incorrect amounts are circled.</p> <p>Accept alternative unambiguous indications, eg numbers ticked, crossed or underlined.</p>
<b>8</b>	Award <b>TWO</b> marks for diagrams ticked or crossed as shown:  <p>If the answer is incorrect, award <b>ONE</b> mark for four diagrams ticked or crossed correctly.</p>	<b>Up to 2m</b>	<p>Accept alternative unambiguous indications such as <b>Y</b> or <b>N</b>.</p> <p>For <b>TWO</b> marks accept:</p> 
<b>9a</b>	5	<b>1m</b>	
<b>9b</b>	13	<b>1m</b>	
<b>10</b>	Award <b>TWO</b> marks for all three letters in the correct order as shown: F E B <p>If the answer is incorrect, award <b>ONE</b> mark for two of the three letters correct.</p>	<b>Up to 2m</b>	
<b>11</b>	Numbers written in correct order as shown: 	<b>1m</b>	
<b>12a</b>	$20 \oplus 8 = 4 \otimes 7$	<b>1m</b>	
<b>12b</b>	$21 \oslash 3 = 15 \ominus 8$	<b>1m</b>	

## Test B questions 13–17

Question	Requirement	Mark	Additional guidance
<b>13</b>	11	<b>1m</b>	
<b>14</b>	<b>B AND C</b>	<b>1m</b>	<i>Answers may be given in either order.</i>
<b>15a</b>	Swimming	<b>1m</b>	<i>Accept unambiguous abbreviations or recognisable misspellings.</i>
<b>15b</b>	7	<b>1m</b>	
<b>15c</b>	Football <b>AND</b> Rounders	<b>1m</b>	
<b>16</b>	Level of water indicated as shown: 	<b>1m</b>	<i>Accept answers in the range 215ml to 225ml inclusive.</i>  <i>Accept alternative unambiguous indications of the correct level, provided the intention is clear, eg container shaded.</i>
<b>17</b>	Award <b>TWO</b> marks for the correct answer as shown:  Kate had <span style="border: 1px solid black; padding: 2px;">85p</span> Jamie had <span style="border: 1px solid black; padding: 2px;">65p</span>  If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate method, eg $150 \div 2 = 75$ $(75 + 10)$ <b>AND</b> $(75 - 10)$  <b>OR</b>  a 'trial and improvement' method, eg <ul style="list-style-type: none"> <li>■ 55 35</li> <li>65 45</li> <li>75 55 (a difference of 20p)</li> </ul> <b>OR</b> <ul style="list-style-type: none"> <li>■ 70 80</li> <li>90 60</li> <li>80 70 (a total of £1.50)</li> </ul>	<b>Up to 2m</b>  <span style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">U1</span>	<i>Accept for <b>ONE</b> mark:</i>  Kate had <span style="border: 1px solid black; padding: 2px;">65p</span> Jamie had <span style="border: 1px solid black; padding: 2px;">85p</span> <b>OR</b> Kate had <span style="border: 1px solid black; padding: 2px;">0.85p</span> Jamie had <span style="border: 1px solid black; padding: 2px;">0.65p</span>  <i>Answer need not be obtained for the award of <b>ONE</b> mark.</i>  <i>A 'trial and improvement' method must show evidence of improvement.</i>

## Test B questions 18–20

Question	Requirement	Mark	Additional guidance
<b>18</b>	<p>An explanation which correctly compares two percentages or two scores, eg:</p> <ul style="list-style-type: none"> <li>■ '40 out of 80 is 50%'</li> <li>■ '50% is more than 40%'</li> <li>■ '40% of 80 is 32'</li> <li>■ '40 out of 80 is better than 40 out of 100'</li> <li>■ '40 out of 80 is more than 32 out of 80'</li> <li>■ 'Kate has less than half marks'.</li> </ul>	<p><b>1m</b></p> <p style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">U1</p>	<p>No mark is awarded for circling 'Hassan' alone.</p> <p><b>Do not</b> accept vague or incomplete explanations, eg:</p> <ul style="list-style-type: none"> <li>■ 'Hassan has half marks'</li> <li>■ 'Percentages are bigger'</li> <li>■ 'Hassan has more than 40%'</li> <li>■ 'Kate has less than 40 out of 80'.</li> </ul> <p>If 'Kate' is circled but a correct unambiguous explanation is given, then award the mark.</p>
<b>19</b>	4.86	<b>1m</b>	
<b>20</b>	<p>Award <b>TWO</b> marks for shape drawn as shown:</p> <div style="text-align: center;">  </div> <p>If the answer is incorrect, award <b>ONE</b> mark for:</p> <ul style="list-style-type: none"> <li>■ shape correctly rotated 90° anti-clockwise</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>■ any 3 vertices correct and one incorrect</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>■ both vertices on the shape's axis of symmetry located correctly.</li> </ul>	<p><b>Up to 2m</b></p>	<p>Accept slight inaccuracies in drawing (see page 3 for guidance).</p> <p>Shape need not be shaded.</p>



### Test B questions 21–26

Question	Requirement	Mark	Additional guidance
21	<p>Award <b>TWO</b> marks for the correct answer of £19.38</p> <p>If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate method, eg</p> $114 \times 1.36 \div 8$ <p><b>OR</b></p> $114 \times 136 \div 8$	<b>Up to 2m</b>	<p>Accept for <b>ONE</b> mark £1938 <b>OR</b> £1938p as evidence of appropriate working.</p> <p>Answer need not be obtained for the award of <b>ONE</b> mark.</p>
22a	Answer in the range 7.25cm to 7.75cm inclusive.	<b>1m</b>	Answer is a time interval (see page 5 for guidance).
22b	Answer in the range 3 hours 40 minutes to 3 hours 50 minutes inclusive.	<b>1m</b>	
23a	34	<b>1m</b>	
23b	82	<b>1m</b>	
24	<b>63</b> AND <b>65</b>	<b>1m</b> U1	Answers may be given in either order.
25	$\frac{1}{6}$	<b>1m</b>	Accept equivalent fractions, eg $\frac{4}{24}$
26	<p>Award <b>TWO</b> marks for the correct answer of 108</p> <p>If the answer is incorrect, award <b>ONE</b> mark for evidence of appropriate method, eg</p> $12 \times 12 = 144$ $\frac{3}{4} \text{ of } 144$ <p><b>OR</b></p> $(12 \times 12) - (6 \times 6)$ <p><b>OR</b></p> $(12 \times 6) + (6 \times 6)$ <p><b>OR</b></p> $(6 \times 6) \times 3$	<b>Up to 2m</b> U1	Answer need not be obtained for the award of <b>ONE</b> mark.

# Mark scheme for the mental mathematics test

## Applying the mark scheme

Please note that pupils will not be penalised if they record any information given in the question or show their working. Markers will ignore any annotation, even if in the answer space, and mark only the answer. Markers will accept an unambiguous answer written in the stimulus box, or elsewhere on the page.

Full mark scheme information is given on page 18. In addition, a ‘quick reference’ mark scheme is provided on page 17. This is presented in a similar format to the pupil’s answer sheet.

## General guidance

The general guidance for marking the written tests also applies to marking the mental mathematics test. In addition, the following principles apply.

1. Unless stated otherwise in the mark scheme, accept answers written in words, or a combination of words and figures.
2. Where units are specified, they are given on the answer sheet. Pupils are not penalised for writing in the units again.
3. Where answers are required to be ringed, do not accept if more than one answer is ringed, unless it is clear which is the pupil’s intended answer. Accept also any other way of indicating the correct answer, eg underlining.

# Mental mathematics 2007

## quick reference mark scheme

Practice question

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Time: 5 seconds

1	72
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2	£ 3.50	Do not accept £3.5
---	--------	--------------------

3	182
---	-----

4	1.9
---	-----

5	200
---	-----

Time: 10 seconds

6	82
---	----

7	1001
---	------

8	15
---	----

9	220
---	-----

10	25 cm
----	-------

11	20%	30%	40%
	50%	<b>60%</b>	

12	5
----	---

13	£1.35	Accept 135
----	-------	------------

14	2700 g	Answer must be in grams
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15	70
----	----

Time: 15 seconds

16	57
----	----

17	£1.40	Do not accept £1.4
----	-------	--------------------

18	30
----	----

19	25
----	----

20	104
----	-----

## Mental mathematics questions 1–20

Question	Requirement	Mark	Additional guidance
1	72	1m	
2	£3.50	1m	<b>Do not</b> accept £3.5
3	182	1m	
4	1.9	1m	
5	200	1m	
6	82	1m	
7	1001	1m	
8	15	1m	
9	220	1m	
10	25 cm	1m	
11	<div style="display: flex; justify-content: space-around; align-items: center;"> <span>20%</span> <span>30%</span> <span>40%</span> </div> <div style="display: flex; justify-content: center; align-items: center; margin-top: 5px;"> <span>50%</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px 10px; margin: 0 10px;">60%</span> </div>	1m	Accept any other way of indicating the answer, eg underlining. <b>Do not</b> accept if more than one answer is indicated unless the pupil's intention is clear.
12	5	1m	
13	£1.35	1m	Accept 135
14	2700g	1m	Answer must be in grams.
15	70	1m	
16	57	1m	
17	£1.40	1m	<b>Do not</b> accept £1.4
18	30	1m	
19	25	1m	
20	104	1m	





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