

Ma

KEY STAGE

3

HIGHER TIERS  
TEST B

Mathematics tests

# Mental mathematics

Test B transcript

## CONFIDENTIAL MATERIAL ENCLOSED

THIS BOOKLET CONTAINS CONFIDENTIAL TEST QUESTIONS –  
IT MUST BE KEPT SECURE. IT SHOULD NOT BE OPENED UNTIL  
THE MENTAL MATHEMATICS TEST IS DUE TO START ON

**WEDNESDAY 7 MAY 2008.**

EARLY OPENING, UP TO ONE HOUR BEFORE THE TEST  
STARTS, IS PERMISSIBLE ONLY IF PAPERS ARE NEEDED FOR  
ADMINISTRATIVE PURPOSES.

This booklet contains a transcript of the key stage 3 mental mathematics test B. It should be used **ONLY** in cases of CD failure or for specific special arrangements outlined in the 2008 *Assessment and reporting arrangements* booklet for key stage 3.

2008

# Notes for use of transcript

## Instructions

In the event of CD failure, the test administrator should follow the instructions on pages 2 and 5.

1. Pupils should have only pens or pencils. They should not have rubbers, rulers, calculators or any other mathematical equipment. Access to paper for working out answers is **not allowed**.
2. Ensure that each pupil has an answer sheet. Tell the pupils to write their name and school in the box at the top of the answer sheet.
3. Ensure the pupils understand that:
  - they must complete the test on their own without copying or discussing questions with other pupils
  - they will be told how long they have to answer each question and that the time given will increase from 5, to 10, to 15 seconds as the test progresses through the three sections
  - for some of the questions, the information they will need is included in or beside the answer box on the pupil answer sheet
  - they are not allowed to use a calculator or any other mathematical equipment
  - if they want to change their answer, they should put a cross through their first answer. They are not allowed to rub out any answers
  - they should answer as many questions as they can. If they find a question too difficult, they should put a cross in the answer box and wait for the next question
  - they should not write in the white boxes in the blue margins
  - they will not be allowed to ask any questions once the test has started.
4. The test administrator must have access to a clock or watch that measures accurately in seconds.

Instructions continued on page 5

## Higher tiers test B questions

'Now we are ready to start the test.'

*For the first group of questions you will have 5 seconds to work out each answer and write it down.'*

1	Multiply six by six.
2	I start at four point seven and count on in equal steps: four point seven, four point eight, four point nine. Write down the next two numbers in the sequence.
3	Double the expression on your answer sheet.
4	Write seven-hundredths as a decimal.
5	Look at the scatter graph. It shows a type of correlation. Put a ring round the word that describes the type of correlation it shows.
6	Write ten out of twenty-five as a percentage.

*'For the next group of questions you will have 10 seconds to work out each answer and write it down.'*

7	Look at the triangle drawn on the grid. What are the coordinates of the point marked A?
8	Look at the scale. About what value is the arrow pointing to?
9	What is half of three pounds sixty?
10	How many millimetres are there in ten centimetres?
11	Double two point nine.
12	Look at the diagram. Estimate the size of angle $a$ .
13	How many fifths are there in two?
14	What is one quarter of one hundred and forty-eight?

*'Now turn over your answer sheet.'*

## Pupil answer sheet

Key stage 3 mathematics 2008  
Mental mathematics Test B

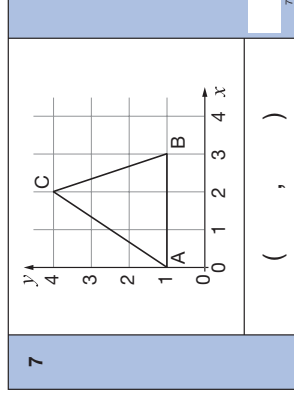
First name \_\_\_\_\_  
Last name \_\_\_\_\_  
School \_\_\_\_\_

Total marks

Time: 5 seconds continued

6	%	10 out of 25	<input type="text"/>
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Time: 10 seconds

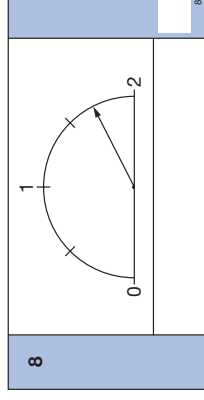
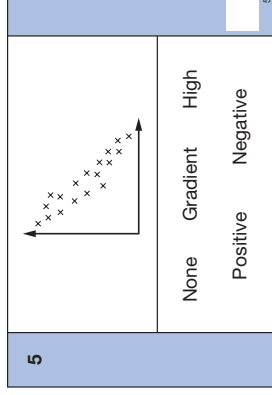


Practice question

	99
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Time: 5 seconds

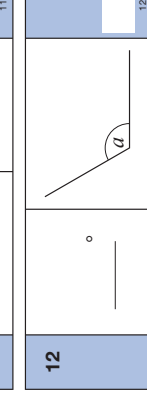
1	<input type="text"/>	<input type="text"/>
2	4.7, 4.8, 4.9, _____, _____	<input type="text"/>
3	$4pq$	<input type="text"/>
4	$\frac{7}{100}$	<input type="text"/>



9	£	£3.60	<input type="text"/>
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10	mm	10cm	<input type="text"/>
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11		2.9	<input type="text"/>
----	--	-----	----------------------



13	$\frac{1}{5}$	2	<input type="text"/>
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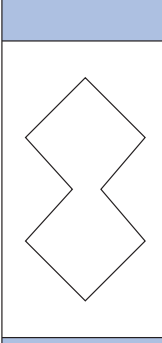
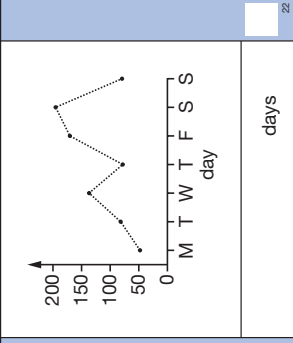
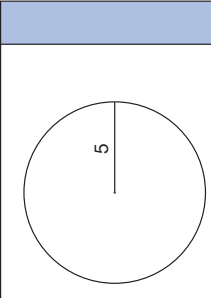
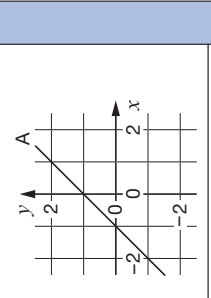
14		148	<input type="text"/>
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15	Look at the polygon. Write down its mathematical name.
16	There are seventeen red and thirteen green apples in a bag. I am going to take out an apple without looking. What is the probability that the apple will be green?
17	What is the next square number after thirty-six?
18	Look at the equation. What is the value of $x$ ?
19	A square of side two centimetres is enlarged by scale factor two. What is the area of the enlarged square?
20	Look at the expression. When $x$ is three, what is the value of the expression?
21	A cylinder has a base area of ten square centimetres and a volume of ninety cubic centimetres. What is the height of the cylinder?

**'For the next group of questions you will have 15 seconds to work out each answer and write it down.'**

22	The line graph shows the number of ice creams sold at a cinema in one week. On how many days were the sales more than one hundred?
23	Think about a pyramid that has a triangular base. How many triangular faces does it have altogether?
24	Car parking costs forty pence for every five minutes. How much will it cost to park for one hour?
25	Look at the fractions. Put rings round all those that are greater than three-quarters.
26	A circle has a radius of five. One of the values on your answer sheet shows its circumference. Put a ring round the correct value.
27	A million pound lottery prize is divided in the ratio one to four to five. How much is the smallest share of the prize?
28	Look at the calculation on your answer sheet. Write an approximate answer.
29	Four numbers have a mean of twenty-five. Three of the numbers are shown on your answer sheet. Write down the missing number.
30	Look at the graph. Write down the equation of the line labelled A.

**'Put your pens down. The test is finished.'**

<p><b>Time: 10 seconds continued</b></p> <p>15  15</p> <p>16 <table border="1" style="width: 100%;"><tr><td style="width: 50%;"></td><td style="width: 50%;">17 red 13 green</td></tr></table> 16</p> <p>17 <table border="1" style="width: 100%;"><tr><td style="width: 50%;"></td><td style="width: 50%;">36</td></tr></table> 17</p> <p>18 <table border="1" style="width: 100%;"><tr><td style="width: 50%;"></td><td style="width: 50%;">21 - 3x = 9</td></tr></table> 18</p> <p>19 <table border="1" style="width: 100%;"><tr><td style="width: 50%;">2 cm</td><td style="width: 50%;">Scale factor 2</td></tr></table> 19</p> <p>20 <table border="1" style="width: 100%;"><tr><td style="width: 50%;"></td><td style="width: 50%;">(x + 2)(x - 1)</td></tr></table> 20</p> <p>21 <table border="1" style="width: 100%;"><tr><td style="width: 50%;">10cm<sup>2</sup></td><td style="width: 50%;">90cm<sup>3</sup></td></tr></table> 21</p> <p style="text-align: right;"><b>Time: 15 seconds</b></p> <p>22  22</p>		17 red 13 green		36		21 - 3x = 9	2 cm	Scale factor 2		(x + 2)(x - 1)	10cm <sup>2</sup>	90cm <sup>3</sup>	<p><b>Time: 15 seconds continued</b></p> <p>23 <table border="1" style="width: 100%;"><tr><td style="width: 50%;"></td><td style="width: 50%;"></td></tr></table> 23</p> <p>24 <table border="1" style="width: 100%;"><tr><td style="width: 50%;">£</td><td style="width: 50%;">40p for 5 minutes</td></tr></table> 24</p> <p>25 <table border="1" style="width: 100%;"><tr><td style="width: 50%;">3/5</td><td style="width: 50%;">4/5, 5/6, 6/9, 7/10</td></tr></table> 25</p> <p>26  26</p> <p>27 <table border="1" style="width: 100%;"><tr><td style="width: 50%;">£</td><td style="width: 50%;">1 : 4 : 5</td></tr></table> 27</p> <p>28 <table border="1" style="width: 100%;"><tr><td style="width: 50%;"></td><td style="width: 50%;">39.92 x 41.06 1.98</td></tr></table> 28</p> <p>29 <table border="1" style="width: 100%;"><tr><td style="width: 50%;">-20</td><td style="width: 50%;">80 40</td></tr></table> 29</p> <p>30  30</p>			£	40p for 5 minutes	3/5	4/5, 5/6, 6/9, 7/10	£	1 : 4 : 5		39.92 x 41.06 1.98	-20	80 40
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5. Read out the following script, using exactly these words:

*Listen carefully to the instructions I am going to give you. After I have finished reading them, there will be time for you to ask any questions you might have. However, you will not be able to ask any questions once the test has begun.*

*I will start by reading a practice question. Then I am going to ask you 30 questions for the test. On your sheet there is an answer box for each question, where you should write the answer to the question and nothing else. You should work out the answer to each question in your head, but you may jot things down outside the answer box if this helps you. Do not try to write down your calculations because this will waste time and you may miss the next question. For some of the questions, important information is already written down for you on the sheet.*

*I will read out each question twice. Listen carefully both times. You will then have time to work out your answer. If you cannot work out an answer, put a cross in the answer box. If you make a mistake, cross out the wrong answer and write the correct answer next to it. There are some easy and some harder questions so don't be put off if you cannot answer a question.*

6. Stop and answer any questions that the pupils may have.

7. Read out the following:

*Here is the practice question to show you what to do.*

*I will read the question twice, and you will have 5 seconds to work out the answer and write it in the answer box.*

*Add ten to the number on your answer sheet.*

Repeat the question.

*Add ten to the number on your answer sheet.*

Wait 5 seconds (measured accurately using a clock or watch), then read out the following:

*Now put down your pen or pencil.*

8. Ensure that the pupils have correctly placed their answers to the practice question on their answer sheets. Remind the pupils that, for some questions, information is provided in or beside the answer box. When they are ready to begin the test, tell the pupils that you will not be able to answer any further questions, or interrupt the test, once you have started reading the questions.
9. The questions are given on pages 3–4 of this booklet. The questions must be read out exactly as written. Start by stating the question number, then read each question twice before leaving the 5, 10 or 15 second response time. **These timings must be strictly adhered to.**
10. At the end of the test, tell the pupils to put down their pens or pencils, then collect their answer sheets.



# National Assessment Agency

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