

**Ma**KEY STAGE  
**3**HIGHER TIERS  
TEST A

Mathematics tests

**Mental mathematics**

Test A 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 9 MAY 2007.**

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 A. It should be used **ONLY** in cases of CD failure or for specific special arrangements outlined in the *2007 Assessment and reporting arrangements* booklet for key stage 3.

**2007**

# 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 A 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	How many days are there in ten weeks and two days?
2	Look at the number on your answer sheet. Divide it by one hundred.
3	Look at the numbers on your answer sheet. Add them.
4	Look at the types of triangles on your answer sheet. Put a ring round the one that must have three equal angles.
5	Write the fraction five-twentieths as simply as possible.
6	Round nought point three four eight to two decimal places.
7	Divide minus one hundred by minus ten.
8	Your answer sheet shows the rule for the $n$ th term of a sequence. What is the fifth term of this sequence?
9	Four to the power nine divided by four to the power three is four to the power what?

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

10	Look at the triangle drawn on the grid. What are the coordinates of the point marked A?
11	A book has one hundred and twenty pages. I have read a quarter of the pages. How many pages have I read?
12	Look at the number on your answer sheet. How much must you add to it to make three thousand?
13	The total of four numbers is eighty. What is their mean?
14	Look at the diagram. Write down the size of angle $m$ .
15	A book costs five pounds and ninety-nine pence. What is the total cost of three of these books?

Now turn over your answer sheet.'

## Pupil answer sheet

Key stage 3 mathematics 2007

Mental mathematics Test A

First name \_\_\_\_\_

Last name \_\_\_\_\_

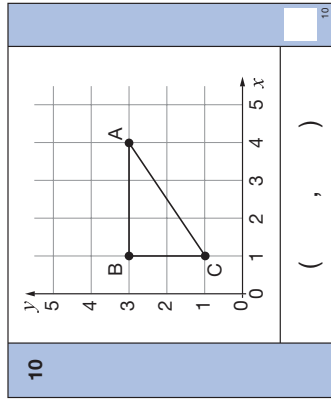
School \_\_\_\_\_

Total marks

Time: 5 seconds continued

7	-100	-10	7
8	$n(n+3)$		8
9	$4^9$	$4^3$	9

Time: 10 seconds



Time: 5 seconds

1	days	1	
2	8400	2	
3	-4	7	3
4	Isosceles Equilateral	Scalene Right-angled	4
5	$\frac{5}{20}$	5	6
6	0.348	6	

11	pages	120	11
12		2092	12
13		80	13
14			14
15	£	£5.99	15

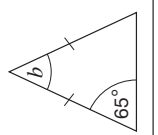
16	What is twenty per cent of seven hundred?
17	Look at the isosceles triangle. What is the size of angle $b$ ?
18	Look at the equation. When $x$ is three, what is the value of $y$ ?
19	The ratio of men to women in a chess club is three to two. There are fifty people in the chess club. How many are women?
20	Multiply two $x$ by five $y$ . Write your answer as simply as possible.
21	Write an approximate answer to the division on your answer sheet.
22	Look at the inequality. How many integer solutions are there?
23	A racing pigeon can fly at a speed of ninety kilometres per hour. At this speed, how far would it fly in one minute?

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

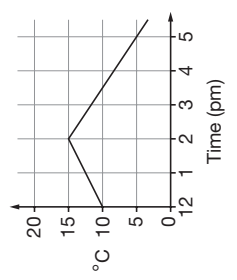
24	Look at the graph. By how much did the temperature fall between two pm and five pm?
25	Look at the rectangle with length six centimetres. Its perimeter is twenty centimetres. What is the width of the rectangle?
26	Look at the equation. When $b$ is eight, what is the value of $a$ ?
27	One hundred and twenty people chose between three types of orange juice. The pie chart shows the results. Sixty people chose type A. Approximately, how many people chose type B?
28	Look at the circle with a radius of ten. One of the values below is its area. Put a ring round the correct area.
29	I am going to take a ball at random from a bag. The probability it will be blue is five-sixths. Twenty of the balls are blue. How many of the balls are not blue?
30	A photograph is enlarged using a scale factor of two and a half. After the enlargement, it has a length of twenty-five centimetres. What was its length before the enlargement?

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

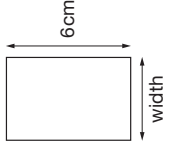
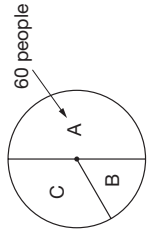
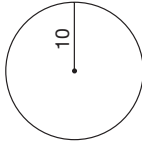
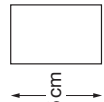
Time: 10 seconds continued

16		700	16
17			17
18		$y = x^2 + 2$	18
19		3 : 2    50	19
20		2x    5y	20
21		$\frac{3009}{599}$	21
22		$5 < x < 9$	22
23	km	90 km/h	23

Time: 15 seconds

24		°C	24
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Time: 15 seconds continued

25		cm	25
26		$b = 2a - 4$	26
27		people	27
28		$10\pi$ $20\pi$ $25\pi$ $30\pi$ $100\pi$	28
29		$\frac{5}{6}$ 20	29
30		cm	30

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.*

*How many fives are there in twenty?*

Repeat the question.

*How many fives are there in twenty?*

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.

