



Independent Schools
Examinations Board

COMMON ENTRANCE EXAMINATION AT 13+

MATHEMATICS

MENTAL ARITHMETIC TEST

EXAMINER'S COPY

Monday 22 January 2018

This paper must not be given to candidates.

- The whole test is expected to take about 20 minutes.
- The instructions and test questions are on the CD supplied.
- Before you start, identify the **pause** button on your machine.
- There are two occasions, one after the instructions and one after the practice question, when the CD should be paused. These are indicated by a 'beep' on the CD.
- A transcript of the instructions and test questions is printed overleaf. In the case of emergency, each question is to be read out **twice**, exactly as it is printed. Then allow the appropriate time before starting the next question.

The following information is to be read out to candidates before the test begins.

- Answers are to be written in the spaces provided on the answer sheet.
- You may use a pen or a pencil.
- You may not use calculators, rulers, geometrical instruments etc.
- Erasers and correcting fluid are not permitted. If you wish to change an answer, you should cross it through and write the correction beside it.
- Write your name, the name of your junior school and the senior school for which you are entered at the top of your answer sheet.



Start the CD.

Listen carefully to the following instructions. Your teacher will pause the CD at the end of these instructions in case you wish to ask any questions. You will then have a practice question, after which the test will begin. Once the test has started, you may not ask any questions and the CD will not be stopped.

There are twenty questions in the test. Each question will be read out twice, then there will be a pause for you to write down your answer.

For the first few questions, you will have five seconds to write down your answer. For the next group of questions, you will have ten seconds. For the final group of questions, you will have twenty seconds.

As you listen to each question, you may make any jottings you wish in the space provided on the answer paper. Try to work out the answer in your head and write the answer clearly in the correct space on the answer paper. You will not lose marks if you show any rough workings.

Your teacher will now pause the CD and answer any questions which you may have.

(signal on the CD)

Restart the CD.

Here is the practice question. I will read the question twice and you will have five seconds to work out the answer and write it in the answer box.

Practice question – What is the sum of eighty-five and fifteen?

Repeat – What is the sum of eighty-five and fifteen? – followed by a five-second pause.

(signal on the CD)

Give the answer (one hundred), settle the candidates then restart the CD.

Now we are ready to begin the test.

For the first group of questions, you have five seconds to write down your answer.

Question 1. How many fives are there in sixty?

Question 2. What number is eight less than negative eighteen?

Question 3. Look at the answer sheet. Work out the size of angle a

Question 4. Billy went away for a skiing holiday on the twentieth of November and returned exactly two weeks later. On which date did Billy return?

Question 5. Write two-fifths as a percentage.

Question 6. Look at the answer sheet. Write down the smallest of the four numbers.

For the next group of questions, you have ten seconds to write down your answer.

Question 7. What is nine squared minus two cubed?

Question 8. Three identical cans of fizzy drink cost one pound and eighty pence altogether. How much would five of these cans of fizzy drink cost altogether?

Question 9. Look at the answer sheet. Shade in two more squares so the complete shape has two lines of symmetry.

Question 10. The population of Russia is about one hundred and forty-three point five million. Write this number in figures.

Question 11. The mean of three numbers is eight. Two of the numbers are both six. What is the other number?

Question 12. A pie chart is drawn which shows people's favourite fruit. Of the twelve people asked, eight chose apples. What size is the angle representing apples on the pie chart?

Question 13. Look at the answer sheet. Write down the equation of the dotted line.

For the final group of questions, you have twenty seconds to write down your answer.

Question 14. It takes Lucy one and one-quarter minutes to swim one length of a swimming pool. At this speed, how many lengths can Lucy swim in twenty minutes?

Question 15. Crisps cost fifty-five pence per packet. What is the greatest number of packets of these crisps I can buy with ten pounds?

Question 16. Write down a value for y so that three y minus two is a prime number.

Question 17. Multiply the square root of ninety thousand by the cube root of twenty-seven.

Question 18. What fraction is three-eighths of four-ninths in its lowest terms?

Question 19. Shape A, with area eight centimetres squared, is enlarged to give shape B, with area seventy-two centimetres squared. By what scale factor is shape A enlarged?

Question 20. Look at the answer sheet. The total area of the three identical triangles is forty-five centimetres squared. Work out the height, h , of one of the triangles.

Now put down your pen or pencil. The test is finished.

(signal on CD)

(Total marks: 20)