

**'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 sides does an octagon have?  |
| 2 | Divide forty-two by seven.  |
| 3 | What number is the arrow pointing to on the number line?                          |
| 4 | Centimetres are a measure of length.<br>What are square centimetres a measure of? |
| 5 | Look at the expression.<br>Write it as simply as possible.                        |

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

|    |  |
|----|--|
| 6  | How many minutes are there in five hours?  |
| 7  | In a survey people were asked if they had a mobile phone.<br>The percentage bar chart shows the results.<br>What percentage of people said yes?                  |
| 8  | I have a bag that contains twenty-pence coins.<br>Altogether, I have twelve pounds.<br>How many twenty-pence coins is that?                                      |
| 9  | Add together the fractions on your answer sheet.   |
| 10 | Look at the equation. When $y$ equals forty-six, what is the value of $x$ ?  |
| 11 | There are seven red and three blue balls in a bag.<br>I am going to take a ball out of the bag at random.<br>What is the probability that the ball will be blue? |
| 12 | Increase one pound fifty by fifty per cent.  |
| 13 | Look at the triangle.<br>What is the size of the angle marked $a$ ?  |
| 14 | Subtract eleven from four.   |
| 15 | What is the sum of the angles in a rhombus?  |

**'Now turn over your answer sheet.'**

Key stage 3 mathematics 2004  
Mental mathematics Test A

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

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

School \_\_\_\_\_

Total marks

Time: 10 seconds

|           |  |   |
|-----------|--|---|
| <b>6</b>  | <input style="width: 90%;" type="text"/> minutes                     | <input style="width: 20px;" type="text"/> |
| <b>7</b>  |  | <input style="width: 20px;" type="text"/> |
| <b>8</b>  | <input style="width: 60%;" type="text"/> £ 12                        | <input style="width: 20px;" type="text"/> |
| <b>9</b>  | <input style="width: 60%;" type="text"/> $\frac{2}{7}$ $\frac{1}{7}$ | <input style="width: 20px;" type="text"/> |
| <b>10</b> | <input style="width: 60%;" type="text"/> $y = 2x + 6$                | <input style="width: 20px;" type="text"/> |
| <b>11</b> | <input style="width: 60%;" type="text"/> 7 red 3 blue                | <input style="width: 20px;" type="text"/> |
| <b>12</b> | £ <input style="width: 60%;" type="text"/> £1.50 50%                 | <input style="width: 20px;" type="text"/> |
| <b>13</b> |  | <input style="width: 20px;" type="text"/> |
| <b>14</b> | <input style="width: 60%;" type="text"/>                             | <input style="width: 20px;" type="text"/> |
| <b>15</b> | <input style="width: 60%;" type="text"/> $7n^2 - n^2$                | <input style="width: 20px;" type="text"/> |

Practice question

|  |  |   |
|--|--|---|
|  | <input style="width: 95%;" type="text"/> | <input style="width: 20px;" type="text"/> |
|  | 60                                       |   |

Time: 5 seconds

|          |   |   |
|----------|---|---|
| <b>1</b> | <input style="width: 95%;" type="text"/>              | <input style="width: 20px;" type="text"/> |
| <b>2</b> | <input style="width: 60%;" type="text"/>              | <input style="width: 20px;" type="text"/> |
| <b>3</b> |   | <input style="width: 20px;" type="text"/> |
| <b>4</b> | <input style="width: 60%;" type="text"/>              | <input style="width: 20px;" type="text"/> |
| <b>5</b> | <input style="width: 60%;" type="text"/> $7n^2 - n^2$ | <input style="width: 20px;" type="text"/> |

|    |   |
|----|---|
| 16 | It takes me one and a half minutes to swim one length of the pool. How many lengths can I swim in fifteen minutes?                                |
| 17 | To the nearest whole number, what is the square root of eighty-three point nine?  |
| 18 | A circle has radius $r$ . What is the formula for the area of the circle?   |
| 19 | Write an equation that shows that $k$ is one more than twice $m$ .  |
| 20 | One hundred pet owners had a dog or a cat, or both. Fifty-five of the hundred had a dog. Sixty-five had a cat. How many had both a dog and a cat? |
| 21 | What must I multiply $n$ squared by to get five $n$ cubed?  |

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

|    |   |
|----|---|
| 22 | The hands of a clock are at right angles. The minute hand is pointing to twelve. What could the hour hand be pointing to? There are two answers. Write them both.                                   |
| 23 | The most popular months to get married are July, August and September. The table shows the percentages of marriages that are in those months. What percentage of marriages are not in those months? |
| 24 | Look at the fractions. Which of them are less than a half? Ring your answers.   |
| 25 | A club played twenty-four games in a season. They won the same number of games as they lost. Use the pie chart to work out how many games they won.   |
| 26 | The angles in a triangle are $k$ , $k$ plus ten and $k$ plus twenty. What is the value of $k$ ?   |
| 27 | A solid pyramid has seven faces. What shape is its base?  |
| 28 | Write three numbers that have a mean of ten and a range of two.   |
| 29 | The diagram shows a quadrilateral. Work out its area.   |
| 30 | The first odd number is one. What is the hundredth odd number?  |

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

|                            |                                |                            |                      |                      |               |                      |
|----------------------------|--------------------------------|----------------------------|----------------------|----------------------|---------------|----------------------|
| Time: 10 seconds continued |                                | Time: 15 seconds continued |                      |                      |               |                      |
| 16                         | lengths                        | 15                         | <input type="text"/> |                      |               |                      |
| 17                         |                                | 83.9                       | <input type="text"/> |                      |               |                      |
| 18                         |                                |                            | <input type="text"/> |                      |               |                      |
| 19                         | $k$ is one more than twice $m$ |                            | <input type="text"/> |                      |               |                      |
| 20                         |                                | 55 65                      | <input type="text"/> |                      |               |                      |
| 21                         |                                | $n^2$ $5n^3$               | <input type="text"/> |                      |               |                      |
| 22                         | ..... or .....                 |                            | <input type="text"/> |                      |               |                      |
| 23                         | July                           | 12%                        | <input type="text"/> |                      |               |                      |
|                            | August                         | 14%                        |                      |                      |               |                      |
|                            | September                      | 13%                        |                      |                      |               |                      |
|                            |                                | %                          | <input type="text"/> |                      |               |                      |
| 24                         | $\frac{1}{50}$                 | $\frac{2}{3}$              | $\frac{3}{4}$        | $\frac{1}{10}$       | $\frac{3}{7}$ | <input type="text"/> |
| 25                         |                                |                            |                      |                      |               | <input type="text"/> |
| 26                         | $k$                            | $(k + 10)$                 | $(k + 20)$           | <input type="text"/> |               |                      |
| 27                         | <input type="text"/>           |                            |                      |                      |               |                      |
| 28                         |                                | mean 10                    | range 2              | <input type="text"/> |               |                      |
| 29                         |                                |                            |                      |                      |               | <input type="text"/> |
| 30                         | <input type="text"/>           |                            |                      |                      |               |                      |