



UNITED KINGDOM MATHEMATICS TRUST

## **SPEED TEST**

- Time allowed: 20 minutes.
- There are 20 questions to try to answer in the time allowed.
- Calculators may not be used.
- *Three* marks are awarded for every correct answer written on the answer grid. An answer is marked either correct or incorrect so no partial marks are given.
- Marks are not awarded for correct answers that have not been written on the answer grid, so make sure you write your answers on this. Units can be ignored.
- You will have to decide your team's strategy for this speed test and can organise yourselves to answer the questions however you want as quickly as possible.

1. What is  $10,000 - 1,000 + 100 - 10 + 1$ ?
2. What is  $\frac{1}{32} + \frac{1}{16} + \frac{1}{8} + \frac{1}{4} + \frac{1}{2}$  in its simplest form?
3. Andrew has more money than Nicky. If Andrew gave Nicky £4, they would have the same amount. While if Nicky gave Andrew £6, Andrew would then have twice as much as Nicky. How much does each one actually have?
4. What is  $\frac{2}{3}$  of  $\frac{3}{10}$  of 90 minus  $\frac{5}{6}$  of  $\frac{6}{7}$  of 49?
5. What is 20% of 30% of 450?
6. Two tables each have three boxes of chocolate on them. Each box has four chocolates in them and each chocolate contains five coffee beans. How many coffee beans are on both tables?
7. The mean, median and modal age in years of four children aged at least one-year old is 3. How many possible combinations are there of the four children's ages? (2,3,3,4 is the same as 3,3,4,2)
8. What is the sum of the different prime numbers which divide 735 perfectly.
9. How many two-digit numbers can be formed using only the numbers 1, 2, 3, 4 and 5? Each digit can only be used once for each two-digit number.
10. What is 15% of 40% of 600?

11. If  $a = -2$ ,  $b = -3$  and  $c = 3$ , find  $b \times (-a) \times b - c^2$
12. A line is 0.2mm thick. How long would the line need to be in metres to cover an area of 1 metre square?
13. If 35% of my age in years is 10.5, how old am I?
14. The first triangle number is 1, the second triangle number is 3, 6 is the third, and 10 is the fourth. What is the sum of the triangle numbers less than 100 which end in a 5?
15. In how many different ways can a row of five "on/off" switches be set so that no two adjacent switches are in the "off" position?
16. What is 25% of 30% of 40?
17. What is  $\frac{1}{10} \times \frac{2}{9} \times \frac{3}{8} \times \frac{4}{7} \times \frac{5}{6}$  in its simplest form?
18. How many prime numbers less than 100 end in a 1?
19. An anagram of the XXYXX is YXXXX. How many anagrams are there of YXXXX (including the original)?
20. How many letters of the word **PRIMATE** do not have any lines of symmetry?

## Speed Test Answer Sheet

**School Name:** \_\_\_\_\_ **School Number** \_\_\_\_\_

<u>Question 1</u>	<u>Question 11</u>
<u>Question 2</u>	<u>Question 12</u>
<u>Question 3</u>	<u>Question 13</u>
<u>Question 4</u>	<u>Question 14</u>
<u>Question 5</u>	<u>Question 15</u>
<u>Question 6</u>	<u>Question 16</u>
<u>Question 7</u>	<u>Question 17</u>
<u>Question 8</u>	<u>Question 18</u>
<u>Question 9</u>	<u>Question 19</u>
<u>Question 10</u>	<u>Question 20</u>

Three marks are awarded per correct answer.

**Total marks:**