

Mathlete Training Centre
HUA XIA CUP PRELIMINARY ROUND 2023 PRIMARY 4

1. A pyramid has 6 faces. How many edges does it have?

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2. The sum of Hua and Xia's age is 16. 1 year later, Hua's age will be twice of that of Xia. How old is Hua now?

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3. Given $10000 \div 23 = 434 \dots 18$. What is the smallest five-digit numbers among the multiples of 23?

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4. There are 10 different spinning tops. If Hua wants to buy 2 spinning tops, how many ways can Hua buy them?

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5. Find the average of 20, 23, 19, 18, 22 and 24.

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6. The volume of a cube with edge length of 1 centimetre is defined as 1 cubic centimetre. The length, width and height of a cuboid are 8, 6 and 5 centimetres respectively. What is the volume of the cuboid in cubic centimetres?

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7. Refer to the sequences, the digits are arranged in a certain pattern. If the sum of the digits is 195, how many digits are there in this sequence?

123212321232123...

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8. Find the value of $36000 \div 375$.

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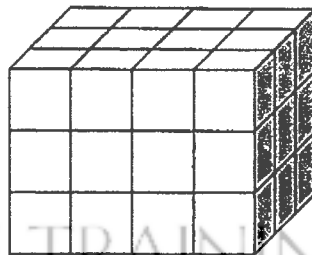
9. There are some chickens and rabbits in a cage. There are 43 heads and 132 legs. How many rabbits are there?

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10. Refer to the figure. It is formed from 36 small cubes. If the surface of the figure below is painted, how many small cubes with 2 faces painted are there?



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Section B (Q11 - Q20) Each question is worth 7 marks

11. Fill one digit in each box to make the following equation valid. What is the product of the calculation?

$$\begin{array}{r} \\ \times \\ \hline \\ \\ \hline \end{array}$$

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12. Express 2023 as a sum of three natural numbers, to make their products to be the largest. What is the unit-digit of the product?

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13. In a multiplication of two numbers, the ten digit of a multiplier is 8 and it is mistakenly written as 5. The product obtained is 1696. The correct product should be 2656. What is the sum of the two numbers?

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14. Hua has 20 more cards than Xia but 23 fewer cards than Bei. The number of cards Bei has is 2 times of that of Xia. How many cards does Hua have?

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15. There are some chickens and rabbits in a cage. The number of chickens is 16 greater than that of rabbits. There are 212 legs in total. How many chickens are there?

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16. Hua is putting flags along the two sides of the road outside school. Flags are put at both ends of the road. Hua puts flags every 23 metres. 202 flags are put in total. How long is the road in metres?

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17. Find the value of $9 + 9 + 3 + 3 + 1 + 1 + \frac{1}{3} + \frac{1}{3} + \frac{1}{9} + \frac{1}{9} + \frac{1}{27} + \frac{1}{27} + \frac{1}{27}$.

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18. Hua and Xia go from point A to point B . Xia runs 5 metres per second and start 27 seconds earlier than Hua. Hua meets Xia 45 seconds after he starts. Then he reaches point B 15 seconds later. At this moment, how many more seconds does it take for Xia to get to point B ?

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19. In a mathematics contest, three teachers estimate the ranks of four students:

Sir Zhao: 'Chua is the 4th. Bei is the 1st.'

Sir Qian: 'Hua is the 2nd. Xia is the 1st.'

Sir Sun: 'Chu is the 3rd. Hua is the 4th.'

The four students are at the first four ranks, and no two of them are at the same rank. Each of the three teachers make only one correct estimation. The ranks of Hua, Xia, Bei and Chua are A, B, C and D respectively. Find the four-digit number \overline{ABCD} .

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20. Student A, B, C and D are passing a ball. At the beginning, the ball is in A 's hands. After 4 passes, the ball is in D 's hands. How many ways are there to pass the ball?

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