



UNICUS  
OLYMPIADS

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## Sample Paper



**Class 4**

## Unicus Non-Routine Mathematics Olympiad (UNRMO)

Time: 60 minutes

Pattern and Marking Scheme			
Section	Total Questions	Marks per Question	Total Marks
Classic Section	10	3	30
Scholar Section	10	6	60
Grand Total	20		90



## Unicus Non-Routine Mathematics Olympiad (UNRMO)

7. Bren gave out two statements to identify a secret number. The first statement said that multiplying a certain number with itself 7 times would result in the secret number. The second statement said that the secret number had 8 factors out of which only 1 factor was prime. Find the secret number.

a. 24  
c. 128

b. 48  
d. 130

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8. Rachel has two flowering plants. One plant has flowers with 6 petals and another plant had flowers with five petals in it. Yesterday she counted that the total number of petals on both the plants together was 53. One plant had only three flowers yesterday. Find the total number of flowers in both plants.

a. 3  
c. 8

b. 7  
d. 10

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9. Monty ate 5 cookies after lunch and 3 cookies after dinner every day. He continued eating that for 2 weeks. He found that the number of cookies he ate in the last two weeks was double the number of cookies he ate last year for the same period. How many cookies did he eat each day last year?

a. 2  
c. 6

b. 4  
d. 8

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10. Ken started her tour on 16<sup>th</sup> Feb 2021 and travelled to 14 different cities. She travelled 16750 kilometres and returned home on 4<sup>th</sup> March 2021. Rose offered her another trip whose travel distance would be only  $\frac{6}{25}$  of her previous tour. Find the travel distance of Ken's upcoming trip.

a. 670 km  
c. 4020 km

b. 3350 km  
d. 10000 km

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### Scholar Section (Each Question is 6 Marks)

11. The volume of a cube is the product of the HCF and the LCM of 8 and 64. Find the length of each side of the cube:

a. 6 units  
c. 64 units

b. 8 units  
d. 512 units

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12. In the year 2008, Mr Thomson was 45 years old and his wife was 40 years old. They had a son aged 17 and a daughter aged 11. In which year the family the sum of all the family members will be 201?

a. 2022  
c. 2030

b. 2025  
d. 2033

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**Unicus Non-Routine Mathematics Olympiad (UNRMO)**

13. Leo is 56 years old and the sum of the ages of Sia and Sam are equal to Leo's age. Sia's mother is 14 years younger than Leo. If Sam is half the age of Sia's mother, find the age of Sia.

- a. 23
- b. 32
- c. 35
- d. 42

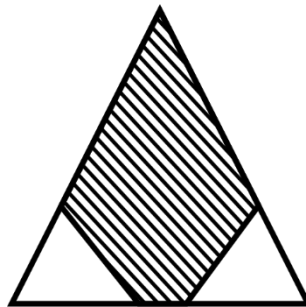
14. The prime factors of 130 were added to the even factors of 124 to obtain the total marks scored by Sandy. But Sandy said that by reversing the digits, we will get the total marks of the test. What percent marks did he get?

- a. 100
- b. 80
- c. 50
- d. 30

15. George calculated the total area of the given triangle but did not disclose it to anyone, Kiko knew the exact area covered under the shaded part. Linda knew the exact fraction of the triangle which was unshaded. When Kiko and Linda disclosed the numbers they knew to each other, they were able to calculate the area of the triangle. They told it to George who confirmed that their answer was correct. Can you figure out the total area of the triangle using Kiko and Linda's statements?

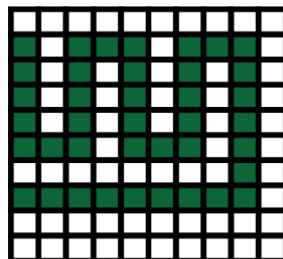
Kiko – The area of the shaded part is 189 square cm.

Linda – One-fourth of the triangle is unshaded



- a. 252 sq. cm
- b. 192 sq. cm
- c. 244 sq. cm
- d. 272 sq. cm

16. Lucifer shaded some blocks in green colour and offered the figure to Harry to find out the number of blocks shaded. Harry answered him and gave the figure back to Lucifer with another question. Harry asked if all the square boxes were identical and their total area was 156 square units, find the perimeter of one square block.



- a. 2
- b. 4
- c. 6
- d. 8

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17. Eight girls in a class were asked to stand in such a way as they form a proper circle. The teacher asked a boy to measure the distance between two girls standing diagonally opposite each other. He measures the distance to be 58 inches. At what distance is the centre of the circle from any of the following girls?

- a. 29 inches  
b. 39 inches  
c. 44 inches  
d. 54 inches

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18. Ben was asked to write down his age in three different forms. His real age was the largest factor of the predecessor of twenty. As mentioned, Ben wrote his age in three different forms on a piece of paper. Find out which option matches correctly with his real age.

- a. XVIII, Nineteen, Product of 2 and 9  
b. Eighteen, Product of 2 and 9, XVIII  
c. Successor of XVIII, Multiple of 19, Nineteen  
d. Predecessor of XX, Factor of 38, Product of 2 and 9

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19. The semi-perimeter of Krish's garden was 3224 centimetres. Krish asked his gardener to measure the length of the garden and he measured the breadth of the garden. When they noted the measurements they found that the length was three times the breadth of the garden. Find the length of his garden.

- a. 2418 cm  
b. 1018 cm  
c. 804 cm  
d. 432 cm

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20. Jenny was storing some numbers in 3 different variables.

Variable 1 = P = The number stored in it was the 13th multiple of 17

Variable 2 = Q = The number stored in it was the sum of the factors of 14

Variable 3 = R = The number stored in it was the largest factor of 132

Jenny calculated  $P + R - Q$ . Find the value obtained.

- a. 227  
b. 299  
c. 329  
d. 353

## Answer Key

1.	d	2.	c	3.	c	4.	a	5.	b	6.	d	7.	c
8.	d	9.	b	10.	c	11.	b	12.	c	13.	c	14.	a
15.	a	16.	d	17.	a	18.	c	19.	a	20.	c		