

The University of the West Indies, Mona  
presents  
**2025/2026 Senior Mathematical Olympiad**

Qualifying Round Examination (Grades 7 and 8)

NAME\_\_\_\_\_

GRADE\_\_\_\_\_

SCHOOL\_\_\_\_\_

YEAR OF BIRTH\_\_\_\_\_

STUDENT CONTACT NUMBER\_\_\_\_\_

- EACH entry MUST be accompanied by a nominal entry fee of **J\$1000**
- Be sure to staple ALL pages (including this one) together
- All entries must reach the Mathematics Department, U.W.I by  
**Friday December 19, 2025**
- You may deliver by (a) Hand (b) Courier (c) Local Mail
- The Courier address is  
**Mathematics Department, UWI  
Mona  
Kingston 7**
- The Mailing address is  
**Senior Mathematical Olympiad  
P.O. Box 94  
Mona Post Office  
Kingston 7**

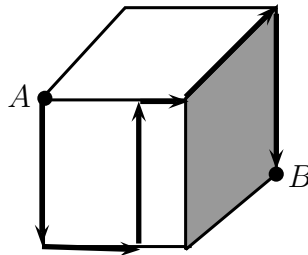
For each question, determine the letter corresponding to the correct or best response; along with the question number, indicate this letter by circling or shading it.

1. The table below shows eight birds ( $B_1$  to  $B_8$ ) in eight of sixteen cells.

$B_1$	$B_2$		
$B_3$		$B_4$	$B_5$
		$B_6$	$B_7$
		$B_8$	

Any of the birds can fly into any of the free cells. What is the least number of the birds that must fly into another cell so that exactly two birds are in any row and in any column of the table.

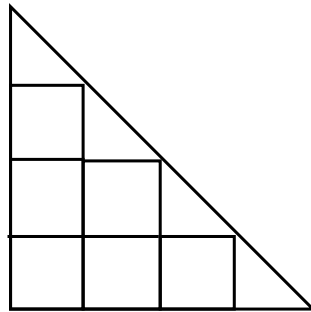
- (A) 1    (B) 2    (C) 3    (D) 4    (E) 5
2. How many half-hours are there in a half of a half of a day?  
 (A) 2    (B) 4    (C) 6    (D) 8    (E) 12
3. Along the edges of a cube, each of length 12 cm, an ant crawls from point  $A$  to point  $B$  along the trajectory shown:



What is the length of the ant's path?

- (A) 48 cm    (B) 60 cm    (C) 72 cm    (D) 64 cm    (E) 54 cm
4. In a school competition among students, Raj had the fiftieth best result which is also the fiftieth poorest result. How many students took part in the competition?  
 (A) 98    (B) 99    (C) 100    (D) 101    (E) 102
5.  $PQR$  is a triangle where the angle at  $P$  is three times the size of the angle at  $Q$  but it is half the size of the angle at  $R$ . What is the size of the angle at  $P$ ?  
 (A)  $30^\circ$     (B)  $36^\circ$     (C)  $40^\circ$     (D)  $54^\circ$     (E)  $60^\circ$

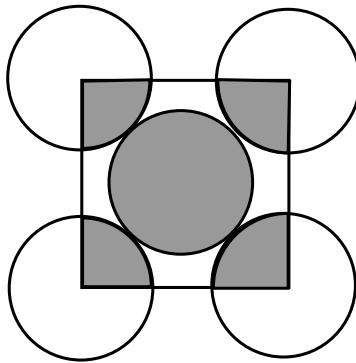
6. Alphia cuts a sheet of paper into 10 pieces. She took one piece and cut it again into 10 pieces. Alphia went on cutting in the same way three more times (five times in total). How many pieces of paper did Alphia have after the last cutting?  
 (A) 45    (B) 46    (C) 47    (D) 48    (E) 50
7. The average of 10 different positive integers is 10. What is the largest possible value of the biggest among the 10 numbers?  
 (A) 60    (B) 55    (C) 25    (D) 14    (E) 10
8. In the picture below,  $x$  is the number of triangles present and  $y$  is the number of squares present.



What is the value of  $x + y$ ?

- (A) 17    (B) 16    (C) 15    (D) 14    (E) 13
9. Any seven-bucket concrete mix consists of 4 buckets of stone, 2 buckets of sand and 1 bucket of cement. What is the number of buckets of stone that is required to make 350 buckets of concrete mix?  
 (A) 25    (B) 50    (C) 100    (D) 150    (E) 200
10. What is the value of
- $$2^{\left(0^{(2^5)}\right)} + \left(\left(2^0\right)^2\right)^5$$
- (A) 0    (B) 1    (C) 2    (D) 3    (E) 4
11. The average of the numbers 3, 5, 7,  $a$  and  $b$  is 15. What is the average of  $a$  and  $b$ ?  
 (A) 0    (B) 15    (C) 30    (D) 45    (E) 60

12. The diagram below shows five circles, each with the same radius and touching as shown.



A small square joins the centres of the four outer circles. What is the ratio of the area of the shaded part of all five circles to the area of the unshaded parts of all five circles?

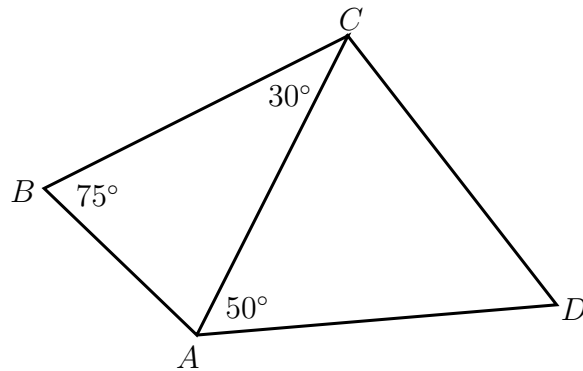
- (A) 1 : 1    (B) 2 : 5    (C) 2 : 3    (D) 5 : 4    (E) 3 : 5
13. Watchie is a watchman that always works 4 consecutive days and rests on the fifth days. Today is Sunday and is one of Watchie's rest days. After how many days will his rest day falls on a Sunday?
- (A) 7    (B) 12    (C) 17    (D) 31    (E) 34
14. The following is a product table. For example, the table shows that  $6 \times 7 = 42$  .

$\times$				7
	<i>J</i>	<i>K</i>	<i>L</i>	56
	<i>M</i>	36	8	<i>N</i>
	<i>O</i>	27	6	<i>P</i>
6	18	<i>R</i>	<i>S</i>	42

What two letters represent the same number?

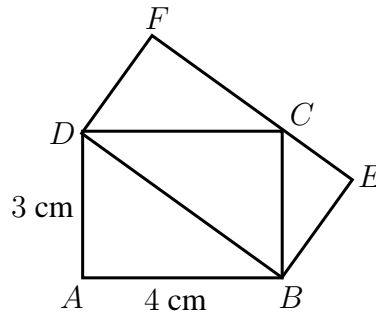
- (A) *L* and *M*    (B) *O* and *N*    (C) *R* and *P*    (D) *M* and *S*    (E) *L* and *S*

15. The diagram shows a quadrilateral  $ABCD$  along with some angles.



- If  $BC = AD$ , what is the measure of angle  $ADC$ ?
- (A)  $50^\circ$     (B)  $55^\circ$     (C)  $60^\circ$     (D)  $65^\circ$     (E)  $75^\circ$
16. Which of the following numbers can be expressed as the product of four different integers, each of which are greater than 1?
- (A) 625    (B) 124    (C) 108    (D) 2187    (E) 2025
17. Juan inflates 8 balloons every three minutes. Unfortunately every tenth balloon pops immediately after having been inflated. How many inflated balloons will Juan have after 2 hours?
- (A) 160    (B) 216    (C) 240    (D) 288    (E) 320
18. In front of Sue-Ann's house there are a number of poles and a number of birds. There is one bird on each pole but there is one bird that is without a pole. Later in the day, the same birds are sitting in pairs on the poles but now there is one pole without a bird. How many poles are there in front of Sue-Ann's house?
- (A) 1    (B) 2    (C) 3    (D) 4    (E) 5
19. A three-digit number and a two-digit number are such that their difference is 989. What is the sum of these two numbers?
- (A) 1009    (B) 1000    (C) 1001    (D) 1010    (E) 1100

20. The figure below shows two rectangles  $ABCD$  and  $DBEF$ .



What is the area of the rectangle  $DBEF$ ?

- (A)  $10 \text{ cm}^2$     (B)  $12 \text{ cm}^2$     (C)  $14 \text{ cm}^2$     (D)  $15 \text{ cm}^2$     (E)  $16 \text{ cm}^2$

21. Mother Hopper and her baby Hopps are two grass hoppers that are hopping around a pond with perimeter 330 m. Both of them make 1 hop every second. The mother's hops are 5 m long, while Hopps' hops are 2 m long. They both start at the same point and move in the same direction. After 25 seconds Hopps get tired and stops while his mother continues to hop. How long will it take for Mother Hopper to be next to Hopps again?

- (A) 15 sec    (B) 24 sec    (C) 51 sec    (D) 66 sec    (E) 76 sec

22. What is the units digit of the sum

$$2^{2025} + 3^{2025} + 5^{2025}?$$

- (A) 8    (B) 6    (C) 4    (D) 2    (E) 0

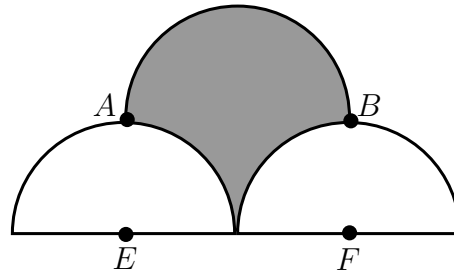
23. A rectangle with length 24 m and width 1 m is cut into smaller rectangles, each with width 1 m. There are four pieces with length 4 m, two pieces with length 3 m and one piece with length 2 m.



These smaller rectangles are put together to form another rectangle. What is the smallest possible perimeter of the new rectangle?

- (A) 14 m    (B) 20 m    (C) 22 m    (D) 25 m    (E) 28 m

24. The diagram below shows 3 semi-circles with points  $A$  and  $B$  directly above the centres  $E$  and  $F$  of the two lower semi-circles.



If the radius of each of the semi-circles is 2 cm, what is the area of the shaded region, in  $\text{cm}^2$ ?

- (A)  $2\pi$     (B) 7    (C)  $2\pi + 1$     (D) 8    (E)  $2\pi + 2$
25. Which of the following is the sum of 5 consecutive numbers?  
(A) 2025    (B) 2024    (C) 2023    (D) 2022    (E) 2021

Please write your name using **BOLD LETTERS** below

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Name