

GUANGDONG-HONG KONG-MACAO GREATER BAY AREA

MATHEMATICAL OLYMPIAD — BIG BAY BEI

(MOCK FINAL ROUND 2026)

Grade: Primary 3 | Time Allowed: 90 minutes

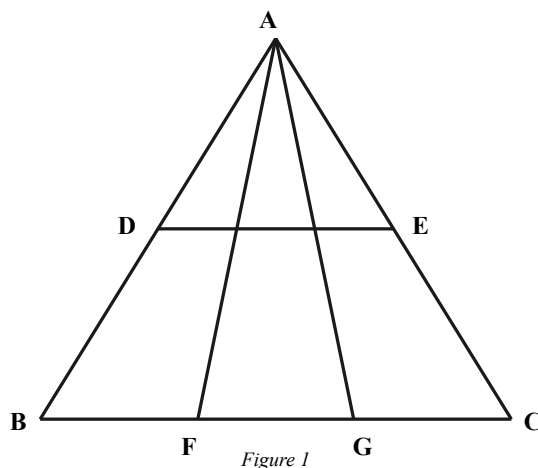
Total Marks: $100 + 50 + 40 = 190$

Section A: 1st to 10th Question (Each carries 4 marks)

- 1. Arithmetic:** Find the value of $25 \times 12 + 25 \times 24 + 25 \times 64$.
 - 2. Number Theory:** How many 3-digit numbers are there such that the sum of their digits is equal to 3?
 - 3. Logical Thinking:** A father is 36 years old and his son is 6 years old. In how many years will the father be exactly 3 times as old as the son?
 - 4. Arithmetic:** Find the value of $1 + 2 + 3 + \dots + 49 + 50 + 49 + \dots + 2 + 1$.
 - 5. Geometry:** A large rectangle is divided into 9 identical small squares. If the perimeter of one small square is 16 cm, find the perimeter of the large rectangle if the squares are arranged in a 3×3 grid.
 - 6. Arithmetic:** Find the value of $9999 + 999 + 99 + 9$.
 - 7. Number Theory:** Find the sum of all even numbers between 1 and 51.
 - 8. Logic:** In a classroom, there are 25 students. If every student shakes hands with every other student exactly once, how many handshakes are there in total?
 - 9. Arithmetic:** Find the value of $2026 \times 11 - 2026$.
 - 10. Number Theory:** What is the smallest 3-digit number that is a multiple of 4, 6, and 9?
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Section B: 11th to 20th Question (Each carries 6 marks)

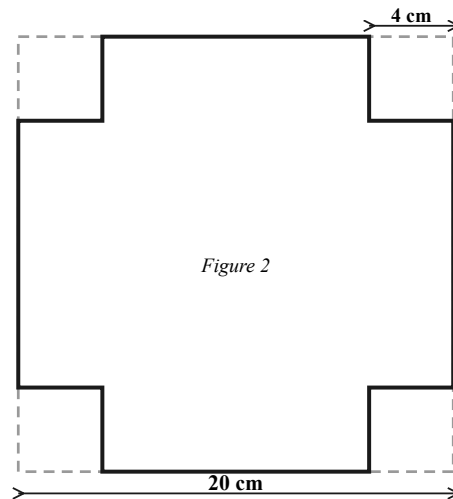
11. **Defined Operation:** If $a \otimes b = (a \times b) - (a + b)$, find the value of $(10 \otimes 5) \otimes 2$.
12. **Logical Thinking:** Five years ago, the sum of the ages of a mother and her daughter was 40. The mother is now 3 times as old as the daughter. How old is the mother now?
13. **Combinatorics:** How many 3-digit numbers can be formed using the digits 0, 2, 4, 6 without repeating any digit?
14. **Calendar:** If February 1st, 2026 is a Sunday, what day of the week will August 1st, 2026 be? (Note: 2026 is not a leap year).
15. **Divisibility:** A 4-digit number $2A4B$ is divisible by 15. What is the largest possible value of this number?
16. **Working Backwards:** A magician doubles the money in a hat and then takes out \$10. He does this two more times (total of 3 times). If the hat is empty at the end, how much money was in the hat at the start?
17. **Logic:** There are 40 students in a class. 25 students like Math, 18 students like Science, and 10 students like both. How many students like neither?
18. **Geometry:** How many triangles are there in the figure below?



19. **Sequence:** Find the 15th term of the sequence: 2, 5, 8, 11, 14, ...
20. **Logic:** A train passes a 200m bridge in 20 seconds. If the train is 100m long, what is the speed of the train in meters per second?

Section C: 21st to 25th Question (Each carries 8 marks)

21. *Advanced Geometry:* Imagine a large square. Four smaller, identical squares are removed from each of the four corners. If the side of the original large square was 20 cm and the side of each removed corner square is 4 cm, find the **perimeter** of the remaining “cross” shape.



- 22. *Number Theory:*** Find the remainder when $1 \times 2 \times 3 \times 4 \times \dots \times 20$ is divided by 100.
- 23. *Combinatorics:*** A bag contains 5 red balls, 7 blue balls, and 9 yellow balls. What is the minimum number of balls you must draw (without looking) to ensure you have at least 3 balls of the same color?
- 24. *Complex Logic:*** If 3 cats can catch 3 rats in 3 minutes, how many cats are needed to catch 100 rats in 100 minutes?
- 25. *Arithmetic Pattern:*** Find the sum of the first 20 terms of the series: $1 - 2 + 3 - 4 + 5 - 6$
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~ End of Paper ~

ANSWER SHEET

Name: _____ School: _____ Date: _____

Question	Marks	Answer
Section A		
1	4	
2	4	
3	4	
4	4	
5	4	
6	4	
7	4	
8	4	
9	4	
10	4	
Section B		
11	6	
12	6	
13	6	
14	6	
15	6	
16	6	
17	6	
18	6	
19	6	
20	6	

Question	Marks	Answer
Section C		
21	8	
22	8	
23	8	
24	8	
25	8	

Total Score: _____ / 190