



奧冠教育中心

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香港國際數學競賽初賽 2019 (香港賽區)

HONG KONG INTERNATIONAL
MATHEMATICAL OLYMPIAD

HEAT ROUND 2019 (HONG KONG REGION)

小學三年級 Primary 3

時限: 60 分鐘

Time allowed: 60 minutes

試題

Question Paper

考生須知:

Instructions to Contestants:

1. 本卷包括 試題 乙份, 試題紙不可取走。
Each contestant should have ONE Question-Answer Book which CANNOT be taken away.
2. 本卷共 5 個範疇, 每範疇有 4 題, 共 20 題, 每題 3 分, 總分 60 分, 答錯不扣分。
There are 5 exam areas and 4 questions in each exam area. There are a total of 20 questions in this Question-Answer Book. Each carries 3 marks. Total score is 60 marks. No points are deducted for incorrect answers.
3. 請將答案寫在 **答題紙** 上。
All answers should be written on ANSWER SHEET.
4. 比賽期間, 不得使用計算工具。
NO calculators can be used during the contest.
5. 本卷中所有圖形不一定依比例繪成。
All figures in the paper are not necessarily drawn to scale.
6. 比賽完畢時, 本試題會被收回。
This Question-Answer Book will be collected at the end of the contest.

請以最簡形式填寫答案, 若計算結果是分數, 請確保為真分數或帶分數, 或將計算結果寫成小數。錯誤單位將不給予任何分數。
Write down the answer in the simplest form. If the calculation result is a fraction, please write down the answer as a proper or mixed fraction, decimal figure is also accepted. Marks will NOT be given for incorrect unit.

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All answers should be written on the ANSWER SHEET.

本試題不可取走。

THIS Question-Answer Book CANNOT BE TAKEN AWAY.

未得監考官同意，切勿翻閱試題，否則參賽者將有可能被取消資格。

DO NOT turn over this Question-Answer Book without approval of the examiner.

Otherwise, contestant may be DISQUALIFIED.

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填空题 (第 1 至 20 題) (每題 3 分, 答錯及空題不扣分)

Open-Ended Questions (1st ~20th) (3 points for correct answer, no penalty point for wrong answer)

Logical Thinking

邏輯思維

1. According to the pattern shown below, what is the number in the blank?

按以下規律, 求在橫線上的數字。

1、1、2、4、7、13、__、....

2. Tomorrow will be Saturday. Which day of the week will 124 days later be?

明天是星期六, 124 天後是星期幾?

3. The age of Alice 8 years later is equal to the age of Peter 3 years ago. How old is Peter when Alice is 20 years old?

愛麗絲 8 年後的年齡與彼德 3 年前的年齡相等。當愛麗絲 20 歲時, 彼德 多少歲?

4. 52 students line up where Alice is the 25th starting from the front. How many student(s) is / are behind her?

52 名學生排成一線, 由前面數起愛麗絲 是第 25 名, 有多少名學生在她身後?

Arithmetic

算術

5. Find the value of $107 + 211 + 118 + 332 + 393 + 189$.

求 $107 + 211 + 118 + 332 + 393 + 189$ 的值。

6. Find the value of $92 \times 23 + 23 \times 108$.

求 $92 \times 23 + 23 \times 108$ 的值。

7. Find the value of $101 \times 11 \times 333 \div 3$.

求 $101 \times 11 \times 333 \div 3$ 的值。

8. Find the value of $20 + 19 + 18 + 17 + 16 + 15 + 14 + 13 + 12 + 11 - 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1$.

求 $20 + 19 + 18 + 17 + 16 + 15 + 14 + 13 + 12 + 11 - 10 - 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1$ 的值。

請以最簡形式填寫答案, 若計算結果是分數, 請確保為真分數或帶分數, 或將計算結果寫成小數。錯誤單位將不給予任何分數。

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Number Theory

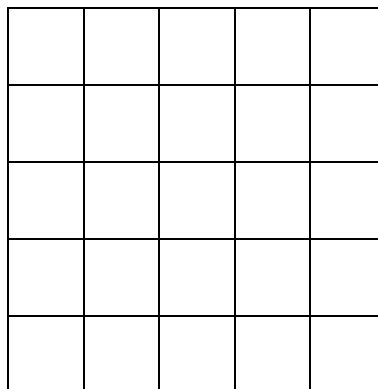
數論

9. Define the operation symbol $a \otimes b = (a+b) \times a$, find the value of $(4 \otimes 7)$.
定義運算 $a \otimes b = (a+b) \times a$, 求 $(4 \otimes 7)$ 的值。
10. Alice and Peter have 111 candies in total. Alice has 17 candies more than Peter. How many candies does Alice have?
愛麗絲和彼德共有 111 粒糖果, 愛麗絲比彼德多 17 粒糖果, 問愛麗絲有多少粒糖果?
11. The numbers below follow the arithmetic sequence, what is the sum of the 8th term and the 11th term?
根據以下的等差數列, 求第 8 項及第 11 項之和。
5、8、11、14、17、...
12. What is the difference between the largest and the smallest 3-digit multiple of 17?
最大與最小的能被 17 整除的三位數相差多少?

Geometry

幾何

13. How many square(s) is / are there in the figure below?
請問下圖有多少個正方形?



Question 13

第 13 題

14. A pyramid has 27 faces, how many vertice(s) does this pyramid have?
有一個錐體有 27 個面, 問這個錐體有多少個頂點?

請以最簡形式填寫答案, 若計算結果是分數, 請確保為真分數或帶分數, 或將計算結果寫成小數。錯誤單位將不給予任何分數。
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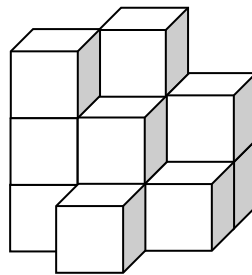
All answers should be written on the ANSWER SHEET.

15. A square whose sides are 36cm long is cut into 9 squares of side length 12cm. What is the difference in perimeters between 9 small squares and the larger square?

1 個邊長為 36 厘米的正方形被切成了 9 個邊長為 12 厘米的正方形，求小正方形的周界之和與大正方形周界之差。

16. At least how many square(s) can be seen if observing the figure below from the right?

如果從側右面觀察下圖的立體，最少可以看見多少個正方形？



Question 16

第 16 題

Combinatorics

組合數學

17. After Alice takes 10 peanuts and 8 peanuts from Peter and Mary respectively, they will have equal number of peanuts. How many peanut(s) did Mary have more than Alice originally?

當愛麗絲在彼德和瑪麗中拿走 10 顆和 8 顆花生後，他們擁有的花生數目便一樣。問原本瑪麗比多愛麗絲多少個花生？

18. Choose 3 digits from 1, 3, 5, 7, 8 to form 3-digit numbers. How many number(s) that can be divisible by 2 is / are there? (The repetition of digits is allowed)

從 1、3、5、7、8 中選 3 個數位組成三位數。請問當中有多少個是 2 的倍數？（數位可以重覆）

19. Numbers are drawn from the 34 integers 1 to 34. At least how many number(s) is / are drawn at random to ensure that there are two numbers whose product is divisible by 3?

在 1 至 34 這 34 個整數中最少任意選出多少個數，才必定有兩個數之積能被 3 整除？

20. 28 students are either wearing L, M or S size uniforms. At least how many student(s) is / are wearing the same size of uniforms?

28 個學生穿上了大、中、小碼校服，至少有多少名學生穿上相同碼的校服？

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請將答案寫在

答題紙

 上。

All answers should be written on the ANSWER SHEET.

~ 全卷完 ~

~ End of Paper ~

請以最簡形式填寫答案，若計算結果是分數，請確保為真分數或帶分數，或將計算結果寫成小數。錯誤單位將不給予任何分數。
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