第十一屆全港小學數學挑戰賽(2024-2025)
The 11ᵗʰ Hong Kong Primary Mathematics Challenge (2024-2025)

決賽（二零二四年十二月七日）
Final (7ᵗʰ December, 2024)

小五組	個人項目	試卷
Primary 5	**Individual Event**	**Question Paper**

參賽者須知 Instructions to Contestants

1. 在比賽過程中，參賽者必須將准考證放在桌上。
   You should place your Admission Form on your desk for the whole session.
2. 於比賽期間必須關掉所有手提電話、通訊工具及其他響鬧裝置。
   During the competition, you should switch off your mobile phone and any other electronic or communication devices that can emit sound.
3. 本項目以筆試形式舉行，須於限時 45 分鐘內完成所有題目。
   Contestants should finish all questions in this 45-minutes written test.
4. 在答題紙上填寫學校名稱、參賽者姓名、參賽者編號、座位編號。
   Write your name, admission number, seat number and school name on the front cover of your answer sheet.
5. 參賽者於比賽時只准使用大會提供之草稿紙。
   You can only use the rough work sheet provided by the organizer.
6. 參賽者不可於比賽中使用計算機。
   The use of calculators is NOT allowed.
7. 每題只需把答案填寫在大會提供之答題紙上，否則不予評分。參賽者不需填寫計算步驟。
   Put your answers on the answer sheet provided, otherwise, the answers will not be marked. You are not required to show the steps in your calculations.
8. 作答時，每題的答案均須以 0 至 9999 之間的整數表示，小於 1000 的答案均須補「0」以湊足四位數字。
   Each answer must be given as an integer between 0 and 9999. In case of an answer less than 1000, leading zeros should be included to make up four digits.
9. 除特殊情況外，參賽者於本項目完結前不能提早交卷或離場。
   Under normal circumstances, contestants are not allowed to leave the contest venue before the end of this session.
10. 違反比賽規則者有可能被取消參賽資格。
    Any contestant who violates the rules and regulations of the competition might risk disqualification.
11. 參賽者如對比賽過程或試題內容有任何疑問或爭議，參賽者須於當天比賽結束後立即向大會提出，否則不予受理。大會保留是次比賽的所有最終決定權。
    If you have any queries, you should contact the officer-in-charge immediately after the competition. Late queries will not be entertained. The decision of the organizing committee will be final.

時限：45 分鐘　　　　　　　　　　　　　　　　　　總分：100

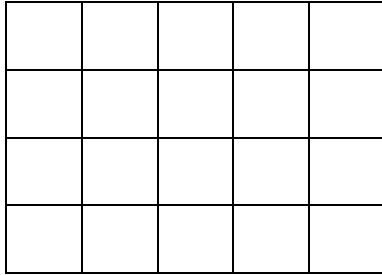Time Allowed:45 minutes　　　　　　　　　　　　Total marks: 100

1. 下圖中有多少個長方形？　　　　　　　　　　　　　　(3 分)

   In the following figure, how many rectangles are there?　(3 marks)

2. 某六個連續整數的和是 243。求最大的整數。　　　　　(3 分)

   The sum of six consecutive integers is 243. Find the greatest integer.　(3 marks)

3. $3^{2024} + 6^{2025}$ 的個位數是多少？　　　　　　　　(3 分)

   What is the unit digit of $3^{2024} + 6^{2025}$？　　　(3 marks)

4. 求 $\dfrac{5}{2\times 7} + \dfrac{5}{7\times 12} + ... + \dfrac{5}{32\times 37}$ 的值。　(4 分)

   Find the value of $\dfrac{5}{2\times 7} + \dfrac{5}{7\times 12} + ... + \dfrac{5}{32\times 37}$.　(4 marks)

5. 若 k 是一個整數，且 $k^2 = 5\,880\,625$，求 k。　(5 分)

   If k is an integer and $k^2 = 5\,880\,625$, find k.　(5 marks)

6. 計算 $\left[\left(4\dfrac{1}{507} - \dfrac{10}{1014}\right)\right] \times \left(\dfrac{1}{1012} + \dfrac{2}{1012} + \dfrac{3}{1012} + ... + \dfrac{1011}{1012} + \dfrac{1012}{1012} + \dfrac{1013}{1012}\right)$。　(5 分)

   Evaluate $\left[\left(4\dfrac{1}{507} - \dfrac{10}{1014}\right)\right] \times \left(\dfrac{1}{1012} + \dfrac{2}{1012} + \dfrac{3}{1012} + ... + \dfrac{1011}{1012} + \dfrac{1012}{1012} + \dfrac{1013}{1012}\right)$.　(5 marks)

7. 求有多少種方式表示 96 為三個不同正整數的連乘？（例子：$96 = 1\times 2\times 48$）　(6 分)

   96 can be expressed as the product of three different positive integers.

   (For example, $96 = 1\times 2\times 48$) How many expressions can be formed?　(6 marks)
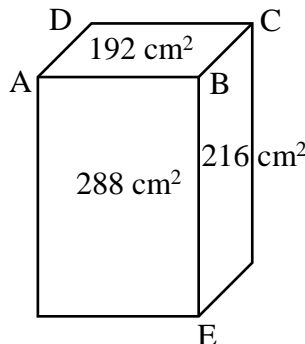
8. 求算式 9 + 989 + 98789 + … + 98765432123456789 的最右邊 4 位數字。　(6 分)

   Find the rightmost 4 digits of the sum 9 + 989 + 98789 + … + 98765432123456789.　(6 marks)

個人項目 Individual Event

9. 下圖中，長方體的側面面積分別為 216 cm² 和 288 cm²，頂面的面積為 192 cm²，求 AB 的長度。 (5 分)

 In the following figure, the lateral area of cuboid area 216 cm² and 288 cm² respectively. The top area is 192 cm², find the length of *AB*. (5 marks)


10. 求 2²⁰²⁴ 被 7 除的餘數。 (4 分)
Find the remainder when 2^{2024} is divided by 7. (4 marks)

11. 有一些五位數，它們各個數位上的數字之積為 2025，有多少個這樣的五位數？(6 分)
There are some five-digit numbers whose digits multiply to 2025.　　How many such five-digit numbers are there ? (6 marks)

12. 根據規律，找出橫線上的數字。
5, 8, 27, 71, 197, 537, 1469, _____ (4 分)
Find the missing number in the pattern.
5, 8, 27, 71, 197, 537, 1469, _____ (4 marks)

13. 在數列 (1)、(2、3)、(4、5、6)、(7、8、9、10)、…中，2024 會在第幾組出現？
(5 分)

 In the sequence　(1)、(2、3)、(4、5、6)、(7、8、9、10)、…, which group will consist of 2024 ?
(5 marks)

14. 下圖中為連接 13 個點的道路網絡。2 個相連點之間的距離為 100 米。湯姆從白點出發，用最短的路徑經過所有 12 個黑點至少一次，並最後回到白點。求路徑的總長度(以米表示)。
(6 分)

 The following figure shows a network of roads connecting 13 dots. The distance between 2 connected dots is 100 m. Tom takes the shortest path to travel from the white dot, visiting all the 12 black dots at least one time and finally returns to the white dot. Find the total length of his path (in m). (6 marks)

100m 100 米
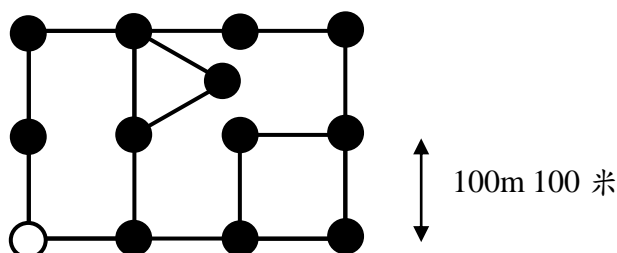
15. 若把 840 寫成兩個正整數的積，求該兩個正整數之差的最小可能值。 (5 分)

   If 840 is written as the product of two positive integers, find the least possible value of the

   difference between these two integers. (5 marks)

16. 用 1、3、5、7、9 這五個數字組成一個五位數，其中數字不能重覆。將這些五位數由小到

   大排列，那麼 95173 排在什麼位置？ (6 分)

   Use 1, 3, 5, 7 and 9 to form a five-digit numbers.   The digits cannot be repeated. Arrange these

   five-digit numbers in ascending order. Where does 95173 rank? (6 marks)

17. 有一項工程，甲獨自完成該工程需要 10 天，乙獨自完成該工程需要 12 天，丙獨自完成該

   工程需要 15 天。現在三人合作完成該工程，但甲中途因病缺席了數天，結果用了 6 天才把

   工程完成，問甲缺席了多少天？ (5 分)

   In a project, it will take 'A' 10 days to complete the project alone, 'B' 12 days and 'C' 15 days.

   Now the three of them are working together to complete the project. However, 'A' was absent for

   several days due to illness. It took 6 days to complete the project. How many days has 'A' been

   absent? (5 marks)

18. 求 20242024×2024-20232023×2023 的頭 4 位數。 (6 分)

   Find the first 4 digits of 20242024×2024-20232023×2023. (6 marks)

19. 如果把分數 $\dfrac{23}{2024}$ 的分子和分母依次加上正整數 a 和 b，其結果是 $\dfrac{1}{24}$。求 $a+b$ 的最小

   值。 (7 分)

   If we add positive integers a and b to the numerator and denominator of fraction $\dfrac{23}{2024}$

   respectively, the result is $\dfrac{1}{24}$. Find the minimum value of $a+b$ .. (7 marks)

20. 將 3、5、7 組成不同的三位數(所有數位不重覆)，求這些三位數之和。 (6 分)

   Find the sum of all 3-digit numbers(all digits are not repeated) formed by 3, 5 and 7. (6 marks)

<center>試卷完 **END OF PAPER**</center>