

第四屆全港小學數學挑戰賽(2017-2018)
The 4th Hong Kong Primary Mathematics Challenge (2017-2018)

決賽 (二零一八年三月二十四日)
Final (24th March, 2018)

小四組 個人項目 試卷
Primary 4 Individual Event Question Paper

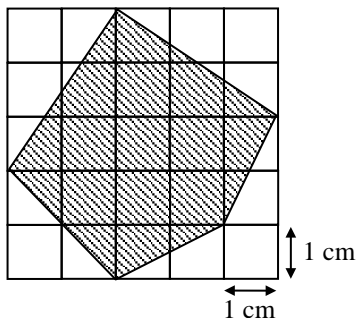
參賽者須知 Instructions to Contestants

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、參賽者姓名及班級、參賽者編號、座位編號。
Write your name, class, 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. 除非問題特別聲明，分數的答案須化至最簡。
Unless otherwise stated by the question, answers of fraction should be expressed in their simplest form.
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：四十五分鐘
Time Allowed: 45 minutes

總分：100
Total marks: 100

- 計算 2018×999 。
Evaluate 2018×999 . (2 分)
(2 marks)
- x 和 24 的最大公因數 (H.C.F.) 和最小公倍數 (L.C.M.) 分別是 8 和 120。
求 x 的值。
The highest common factor (H.C.F.) and the least common multiple (L.C.M.) of x and 24 are 8 and 120 respectively. Find the value of x . (3 分)
(3 marks)
- 兩正整數之和是 39，求該兩數之積的
(a) 最大值；
(b) 最小值。
The sum of two positive integers is 39. Find the
(a) maximum value;
(b) minimum value,
of the product of these two integers. (4 分)
(4 marks)
- 求下圖陰影部份面積。
Find the area of the shaded region of the following figure. (4 分)
(4 marks)



- 求以下數列中方格內的數字。
Find the numbers in the squares of the following sequence. (4 分)
(4 marks)
 $1, 4, 9, 16, 25, \square, \square$
- 在 80 名旅客中，13 位既不懂英文亦不懂中文，32 位懂英文，61 位懂中文，求同時懂英文和中文的旅客人數。
Among the 80 travellers, 13 of them do not know English nor Chinese, 32 of them know English, 61 of them know Chinese. Find the number of travellers who know both English and Chinese. (4 分)
(4 marks)
- 求 2018324×2018324 的最後兩個位數字。
Find the last two digits of 2018324×2018324 . (4 分)
(4 marks)

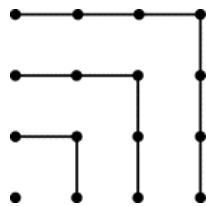
8. 在下圖方格中填上合適的數字，使算式成立。 (4 分)
 Fill the suitable numbers in the boxes below so that the calculation is correct. (4 marks)

$$\begin{array}{r}
 2018 \\
 - \quad \square 3 \square \\
 \hline
 \square 5 \square 9
 \end{array}$$

9. 約翰有 90 個面積各為 1cm^2 的正方形。他運用全部 90 個正方形拼砌成一個面積為 90cm^2 的長方形。求有多少個拼砌方法？ (4 分)
 John has 90 squares and the area of each of them is 1cm^2 . He uses all 90 squares to build a rectangle with area of 90cm^2 . How many ways can the rectangle be built? (4 marks)

10. 計算 $2018 - 2017 + 2016 - 2015 + \dots + 4 - 3 + 2 - 1$ 。 (4 分)
 Evaluate $2018 - 2017 + 2016 - 2015 + \dots + 4 - 3 + 2 - 1$. (4 marks)

11. 觀察下圖，得知 $1 + 3 + 5 + 7 = 4 \times 4$ 。
 求 $1 + 3 + 5 + 7 + \dots + 17 + 19 + 21$ 。 (5 分)
 Observe the figure below to see $1 + 3 + 5 + 7 = 4 \times 4$.
 Find $1 + 3 + 5 + 7 + \dots + 17 + 19 + 21$. (5 marks)



12. 定義 $p @ q = (p \times q) / (p - q)$ 。求 $3 @ (2 @ 1)$ 的值。 (5 分)
 Define $p @ q = (p \times q) / (p - q)$. Find the value of $3 @ (2 @ 1)$. (5 marks)

13. 湯美正在調查一宗謀殺案，以下是四個疑犯的口供。
 A 說：「B 是殺人兇手。」
 B 說：「A 是殺人兇手。」
 C 說：「我不是殺人兇手。」
 D 說：「A 在講大話。」
 經過詳細的調查，湯美得出的結論是這些人當中只有一人講大話，以及殺人兇手只有一個。那麼誰是兇手呢？ (5 分)
 Tommy is investigating a murder case. Here are the claims from each suspect.
 A said, "B is the murderer."
 B said, "A is the murderer."
 C said, "I am not the murderer."
 D said, "A is a liar."
 After further digging into the case, Tommy concludes that only one of them is lying and only one of them is the murderer. So, who is the murderer? (5 marks)

14. 2 元和 5 元的郵票共 32 枚，共值 118 元。求兩種郵票各有多少枚。 (6 分)
 There are 32 stamps, some of them are \$2 stamps and the others are \$5 stamps. The total value is \$118. How many stamps of each type are there? (6 marks)

15. 有 32 個連續偶數，最大的數是最小的數的 2 倍，求最大的數的值。 (6 分)
 There are 32 consecutive even numbers. The largest number is twice the least number. Find the value of the largest number. (6 marks)

16. 如 $0.\dot{1} = 0.111111\dots$ ， $0.45\dot{2}\dot{3} = 0.45232323\dots$ ， $0.45\dot{2}7\dot{3} = 0.45273273273\dots$
 把以下四個循環小數由小至大排列。

$0.274\dot{5}$ ， $0.2\dot{7}4\dot{5}$ ， $0.2\dot{7}4\dot{5}$ ， $0.\dot{2}74\dot{5}$ (6 分)

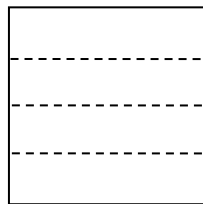
If $0.\dot{1} = 0.111111\dots$ ， $0.45\dot{2}\dot{3} = 0.45232323\dots$ ， $0.45\dot{2}7\dot{3} = 0.45273273273\dots$
 Arrange the following four recurring decimals in ascending order.

$0.274\dot{5}$ ， $0.2\dot{7}4\dot{5}$ ， $0.2\dot{7}4\dot{5}$ ， $0.\dot{2}74\dot{5}$ (6 marks)

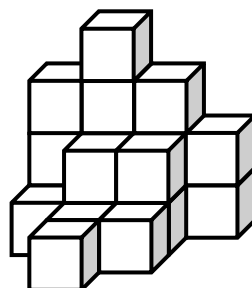
17. 已知 A 和 B 均為正整數。若 $A + B = 19$ 及 $2A - 2 = B$ 。求 $B - A$ 的值。 (6 分)
 Given that A and B are positive integers. If $A + B = 19$ and $2A - 2 = B$.
 Find the value of $B - A$. (6 marks)

18. 瑪莉今年 24 歲，她的歲數是弟弟的四倍。若干年後她的歲數是弟弟的兩倍，求她的年齡。 (7 分)
 Mary, who is now twenty four years old, is four times as older as her brother.
 Find the age of Mary when she is twice as older as her brother after several years. (7 marks)

19. 一個正方形被分成四個大小、形狀一樣的長方形。若每個小長方形的周界是 30cm，求正方形的周界。 (8 分)
 A square is divided into four rectangles with the same sizes and shapes. If the perimeter of each small rectangle is 30cm, find the perimeter of the square. (8 marks)



20. 圖中立體是由二十個相同的立方體組成，每個立方體的邊長為 2cm。求立體的總表面面積。 (9 分)
 The solid in the figure is composed of twenty identical cubes, the length of each side of the cubes is 2cm. Find the total surface area of the solid. (9 marks)



試卷完 END OF PAPER