

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

初賽（二零一七年十二月二日）
 Semi-Final (2nd December, 2017)

小四組	組別項目	試卷
Primary 4	Group 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

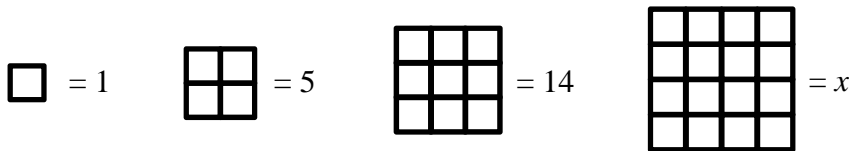
總分：400

Total marks: 400

1. 若 a 及 b 都是整數，且 $a + b = 50$ 。求 $a \times b$ 的最大值。
If a and b are integers and $a + b = 50$, find the largest value of $a \times b$. (15 分)
(15 marks)

2. 一個箱內有 6 個紅球，3 個白球，2 個綠球及 1 個黑球。現在隨意在箱中逐一將球抽出，問最少須抽出多少個球才能保證 3 種不同顏色的球被抽出？
There are 6 red balls, 3 white balls, 2 green balls and 1 black ball in a box. The ball is drawn one by one randomly. To ensure three different colors of balls are drawn, at least how many balls should be drawn from the box? (17 分)
(17 marks)

3. 參考附圖，求 x 的值。
According to the pattern of the following diagrams, find the value of x . (20 分)
(20 marks)



4. 如果五個人的年齡總和是 175 歲，且在五人中沒有小於 26 歲及其中一人為 29 歲，求五人中最大可能年齡的人是多少歲。
If the sum of the age of five people is 175, one of them is age 29 and none of them below the age 26, find the largest possible age among the 5 people. (20 分)
(20 marks)

5. 求 11111111×11111111 的值。
Find the value of 11111111×11111111 . (23 分)
(23 marks)

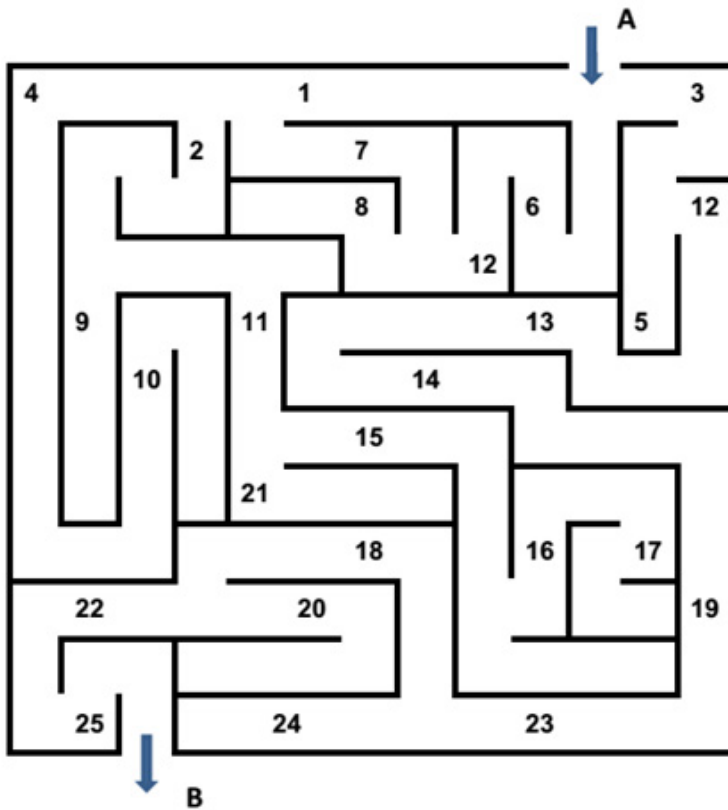
6. 求以下算式中各英文字母可代表的數字(0-9)。(每個英文字母均代表不同的數字。)
Find the digits (0-9) represented by the different letters in the following Calculation. (Each letter has a different value.) (24 分)
(24 marks)

$$\begin{array}{r}
 A B \\
 + C A \\
 \hline
 C D C
 \end{array}$$

7. 瑪莉及東尼的年齡之和是 90。若瑪莉年齡的兩倍和東尼年齡的四倍的和是 280。求瑪莉及東尼的年齡。
The sum of the ages of Mary and Tony is 90. If the sum of twice the age of Mary and 4 times the age of Tony is 280, find the ages of Mary and Tony. (24 分)
(24 marks)

8. 若 6 個橙和 4 個蘋果的價錢為 \$62，而 8 個橙和 10 個蘋果的價錢為 \$106，求每個蘋果和每個橙的價錢。
The price of 6 oranges and 4 apples is \$62, while the price of 8 oranges and 10 apples is \$106. Find the price of an apple and an orange respectively. (25 分)
(25 marks)

9. (a) 請在圖中畫出由 A 到 B 的最短路線。
 Draw the shortest path from A to B on the maze. (13 分)
 (13 marks)
 (b) 求最短路線上的數字總和。
 Find the sum of the numbers on the shortest path. (13 分)
 (13 marks)

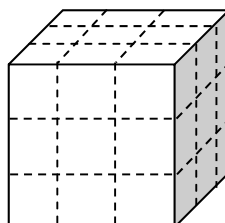


10. 100 至 500 之間有多少個數能被 8 整除？
 How many numbers between 100 and 500 are divisible by 8? (26 分)
 (26 marks)
11. 求 $\underbrace{888 \dots 888}_{2017}$ 除以 3 的餘數。
 Find the remainder when $\underbrace{888 \dots 888}_{2017}$ is divided by 3. (27 分)
 (27 marks)

12. 小明將一立方體的表面涂上漆油，然後沿著虛線切成若干個較小的立方體(如圖所示)。有多少個小立方體
 (i) 只有一面有漆油？
 (ii) 只有兩面有漆油？
 (iii) 只有三面有漆油？ (27 分)

Ming painted the surface of a cube and then cut it into some smaller cubes (as shown in the figure). How many small cubes have paint

- (i) with only one face?
 (ii) with only two faces?
 (iii) with only three faces?



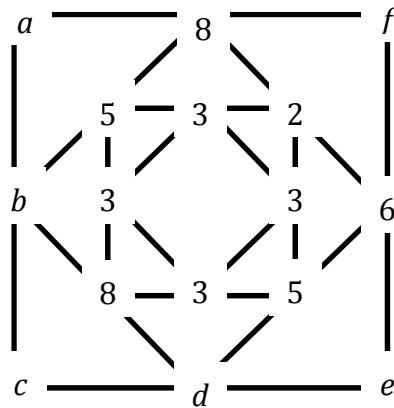
(27 marks)

13. 某測驗有 20 題是非題，答對一題得 3 分，答錯一題扣 2 分。若傑克回答所有問題並得 35 分，求他答對的題數。 (29 分)

There are 20 true-or-false questions in a test. 3 marks will be given for each correct answer and 2 marks will be deducted for each wrong answer. If Jack answers all the questions and gets 35 marks, find the number of correct answers. (29 marks)

14. 圖中， a 、 b 、 c 、 d 、 e 和 f 均為正整數。求 a 、 b 、 c 、 d 、 e 和 f 的值。 (30 分)

In the figure, a, b, c, d, e and f are positive integers. Find the values of a, b, c, d, e and f . (30 marks)



15. 已知 $A + B = 2016$ ， $B + C = 2017$ ， $C + A = 2018$ ，求 $6A + 6B + 6C$ 的值。 (32 分)

Given $A + B = 2016$, $B + C = 2017$, $C + A = 2018$.

Find the value of $6A + 6B + 6C$. (32 marks)

16. 如果英文字 'PRIMARY' 的數字密碼是 '61091251024'，請寫出英文字 'MATHS' 的數字密碼。 (35 分)

If the word 'PRIMARY' can be represented by the code '61091251024', write down the code of the word 'MATHS'. (35 marks)

試卷完 END OF PAPER