

第二屆全港小學數學挑戰賽(2015-2016)
The 2nd Hong Kong Primary Mathematics Challenge (2015-2016)

初賽 (二零一五年十二月五日)
Semi-Final (5th December, 2015)

小四組	組別項目	試卷
Primary 4	Group Event	Question Paper

參賽者須知 Instructions to Contestants

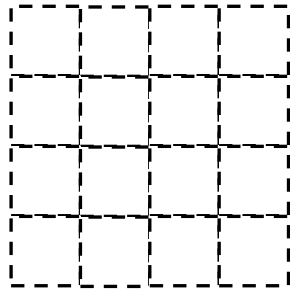
1. 在比賽過程中，參賽者必須將准考證放在桌上。
You should place your Admission Form on your desk for the whole session.
2. 於比賽期間必須關掉所有手提電話、通訊工具及其他響鬧裝置。
During the competition, you should switch off your mobile phone and any other electronic or communication devices that can emit sound.
3. 本項目以筆試形式舉行，須於限時 45 分鐘內完成所有題目。
Contestants 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. 某長方形的長和闊是不同的整數，且其面積為 49。求長方形的周界。 (14 分)
A rectangle whose length and width are different integers has area 49.
Find its perimeter. (14 marks)

2. 以下方格由 16 個邊長為 1 單位的正方形組成，在以下方格中繪畫一個面積為 8 平方單位的平行四邊形。 (16 分)
The following grid is formed by 16 squares of side 1 unit.
Draw a parallelogram on the grid with area 8 square units. (16 marks)



3. 一個五位數，除以 28，餘數是 11，這個五位數最小的值是多少？ (17 分)
When a 5-digit number is divided by 28, the remainder is 11.
Find the least value of that 5-digit number. (17 marks)

4. A 有圖書 120 本， B 有圖書 30 本，如果 A 將 n 本圖書給 B 後， A 的圖書是 B 圖書的 2 倍。求 n 的值。 (19 分)
The number of books of A and B are 120 and 30 respectively. If A gives n books to B , then the number of books of A is 2 times of B . Find the value of n . (19 marks)

5. 求 1024 所有的因數之和。 (21 分)
Find the sum of all the factors of 1024. (21 marks)

6. 若 $23x - 74y = 1$ 且 x 及 y 均為正整數，求 x 及 y 的值。 (21 分)
If $23x - 74y = 1$ and x, y are positive integers, find the values of x and y . (21 marks)

7. 用 0, 1, 2, 3, 4, 5 六個數字，可組多少個沒有數位重覆且數值大於 34000 的五位數？
(22 分)

By arranging six digits 0, 1, 2, 3, 4 and 5, how many 5-digit numbers with no repeated and the value of these number is greater than 34000 can be formed (22 marks)

8. 觀察數列 2, 5, 10, 17, 28, 41, , 的規律，求方格內的數字。(22 分)

Find the number in the boxes of the following sequence : 2, 5, 10, 17, 28, 41, , ...
(22 marks)

9. 在下式的方格內填上適當的 +、-、× 或 ÷。(24 分)

Fill in the boxes with correct symbol +, -, × or ÷ in the following equation. (24 marks)

$$a \div [b \div (c \times d)] = a \quad \square b \quad \square c \quad \square d$$

10. 100 至 200 之間有多少個質數？(26 分)

How many prime numbers are there in between 100 to 200 ? (26 marks)

11. 把以下 6 個數分成兩組，每組 3 個數，且每組的積相等。(27 分)

Divide the following six numbers into 2 groups. So that each group has 3 numbers and their product are equal. (27 marks)

$$33, 34, 38, 57, 77, 119$$

12. 若將數字 '3' 分別放入某數的頭和尾，新的數值將增加 3372，求某數。(31 分)

If a digit '3' is placed at both ends of a number, its value is increased by 3372.

Find the original number. (31 marks)

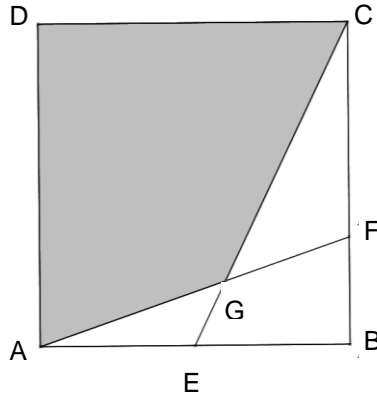
13. 大衛每隔三星期理髮一次，彼得每隔 27 天理髮一次。已知大衛在 4 月 1 日理髮，彼得在 4 月 7 日理髮。那麼，他們將會在該年的那月那日同一天理髮？(31 分)

David cuts his hair in every three weeks and Peter cuts his hair in every 27 days. Given that David cuts his hair on 1st of April while Peter cuts his hair on 7th of April.

Find the date in this year that they will cut their hair on the same day. (31 marks)

14. ABCD 是一邊長為 1m 的正方形，若 AE 的長度是 AB 的一半，BF 的長度是 BC 的四分之一，求陰影區域的面積。 (34 分)

ABCD is a square of side 1m. The length of AE is half of AB and the length of BF is one-fourth of BC. Find the area of the shaded region. (34 marks)



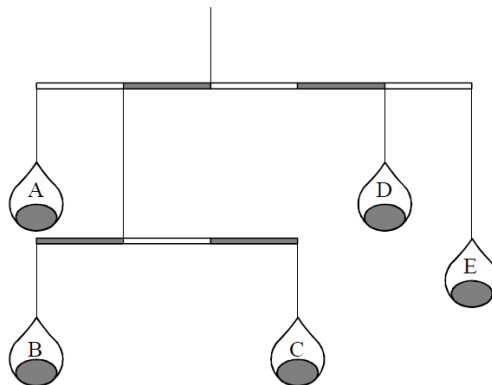
15. 有一水果商人，買進了一批蘋果。當蘋果分裝成 11 箱時，各箱的蘋果數目正好是連續數。同樣，當蘋果分別裝成 12 箱、13 箱時，各個箱子的蘋果數目也都是連續數。問這一批蘋果最少有多少個？ (35 分)

A fruit retailer buys some apples. When he puts all the apples into 11 boxes, the number of apples in each box are consecutive numbers. When he puts into 12 and 13 boxes, the number of apples in each box are also consecutive numbers. What is the least number of apples he buys? (35 marks)

16. 給定一批法碼，掛著法碼的黑色及白色部份長度都一樣，並且該部份及承載法碼的小盤的重量可以忽略。為使圖中的天秤平衡，應如何分配法碼 A, B, C, D 及 E 的重量 (3 千克、4 千克、5 千克、6 千克及 7 千克)? (40 分)

You are given a set of weights. The black and white parts which the pans are hanging are all of the same length and the weight of the parts and pans are negligible. Assign the weights of 3kg, 4kg, 5kg, 6kg and 7kg to the scales A, B, C, D and E such that the scales balance.

(40 marks)



試卷完 END OF PAPER