

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	組別項目	試卷
Primary 4	Group Event	Question Paper

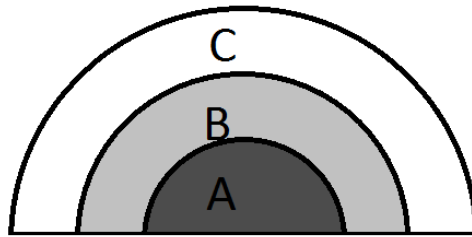
參賽者須知 Instructions to Contestants

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. 約翰參加擲彩虹遊戲 (見下圖)，第一次擲了兩個金幣在 B 區和一個金幣在 C 區，共獲得 9 分。第二次擲了兩個金幣在 A 區和一個金幣在 C 區，獲得 15 分。約翰在第三次擲了一個金幣在各區，約翰 這次獲得多少分？ (17 分)
John participates Rainbow Throw Game (as shown in the figure below). In the first turn, he gets two coins in area B and one coin in area C and scores 9 points. In the second turn, he gets two coins in area A and one coin in area C and scores 15 points. In the third turn, he gets one coin in each of the areas. How many points does he score? (17 marks)

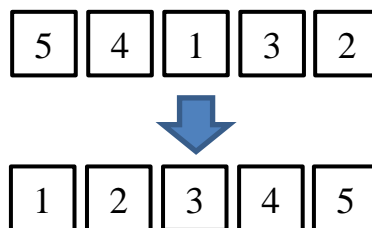


2. 求以下算式的值。 (19 分)
Find the value of the following expression. (19 marks)

$$1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + 1}}}$$

3. 有四個不同的數字。任意兩數之和的結果如下：
7, 11, 14, 18, 21, 25
求這四個數字的平均值。 (20 分)
There are four different numbers. The sum of any two numbers are as follows:
7, 11, 14, 18, 21, 25
Find the mean of these four numbers. (20 marks)

4. 五張卡分別寫上 1 至 5 排列成一行。每一次移動，任何兩張卡可作對調位置一次，求最少移動多少次，令五個數字可以由小至大排列。 (20 分)
Five numbers (1 to 5) were written on papers, and being arranged in a row. For each move, any two cards can be exchanged their position. Any two cards can be switched for each move. Find the least number of moves, so that the five cards can be arranged from small to large. (20 marks)



5. 把 3、4、5、6、7、8 填入下列方格內，且每個數字只能用一次，以得到最大乘積。 (20 分)

Put 3, 4, 5, 6, 7 and 8 into the following boxes to make the greatest product.

Each digit can be used once only.

(20 marks)

$$A = \boxed{} \boxed{} \boxed{} \times \boxed{} \boxed{} \boxed{}$$

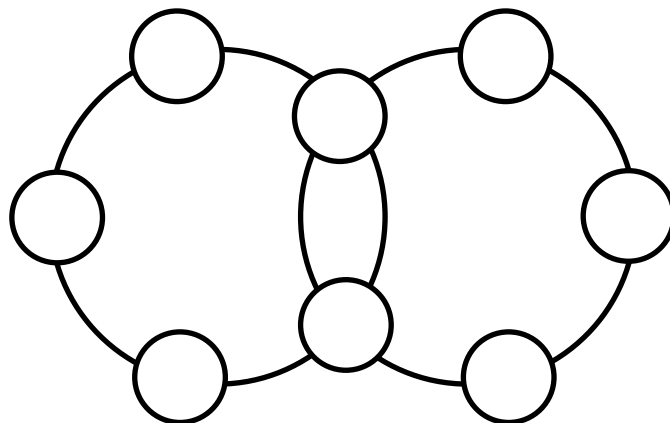
6. 圖中是一個 3×3 的數獨謎題(用 1-9 填入方格內)，求 B 的值。 (22 分)

The following figure is a 3×3 Sudoku question (with 1-9 to be filled in the boxes). Find the value of B. (22 marks)

	4				2			
2					1	6	9	4
1				4			7	8
4		8		6				
				2	B	3		7
3	9			8				5
5	1	7	4					2
			3				4	

7. 把 1 至 8 這八個數，分別填入圖中的空格內，使每個大圓圈穿過的數字的和等於 20。 (24 分)

Put all the eight numbers from 1 to 8 into the circles in the figure so that the sums of the numbers in each larger circle are 20. (24 marks)



8. 在 1 至 100 中 (包括 1 和 100), 有多少個數能被 2 或 3 整除? (24 分)
From 1 to 100 (including 1 and 100), how many numbers are divisible by 2 or 3? (24 marks)

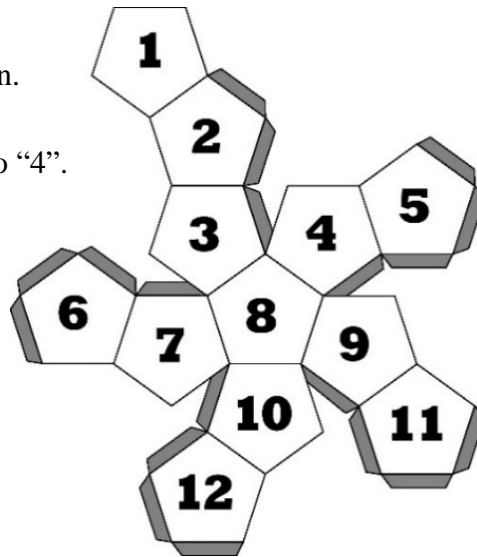
9. 甲和乙在同一地點向同一方向行走。乙行走了 40 米後甲才起步。當乙走了 160 米時, 甲剛好趕上了乙。若乙行走的速度是 6 米/秒, 求甲行走的速度。 (25 分)
A and B ran in the same direction from the same place. A started to run after B had run 40 meters. When B had ran 160 meters, A just caught up with B. If the running speed of B was 6 m/s, find the running speed of A. (25 marks)

10. 圖中是一個正十二面體的摺紙圖樣。

- (a) 「8」的背面是什麼數字?
(b) 求與「4」相鄰的數字之和。

The figure is a net of a regular dodecahedron.

- (a) Which number is opposite to "8"?
(b) Find the sum of all numbers adjacent to "4".



(26 分)

(26 marks)

11. 某年的六月有四個星期一及五個星期日。那麼該年的六月一日是星期幾? (27 分)
In a certain year, there are four Mondays and five Sundays in June.
What is the day of 1st June in that year? (27 marks)

12. A、B、C 和 D 四人參加歌唱比賽, 已知:

1. C 和 D 是朋友;
2. B 和 D 是兄弟;
3. A 比 B 名次較前;
4. 獲得第二名的參賽者不認識其他參賽者;
5. 獲得第一名和第三名的參賽者互不認識。

判斷他們的名次。

(28 分)

Four persons, A, B, C and D participated in a singing competition. It is given that

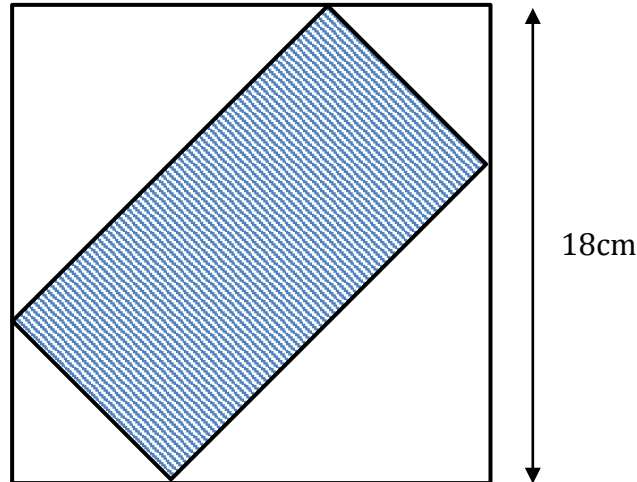
1. C and D are friends;
2. B and D are brothers;
3. The ranking of A is higher than B;
4. The competitor who won the second place does not know other competitors;
5. The first and third place winners do not know each other.

Determine their rankings.

(28 marks)

13. $\overline{2a018324}$ 為一被 11 整除的 8 位數，求 a 的值。 (29 分)
 $\overline{2a018324}$ is an 8-digit number and it is divisible by 11. Find a . (29 marks)

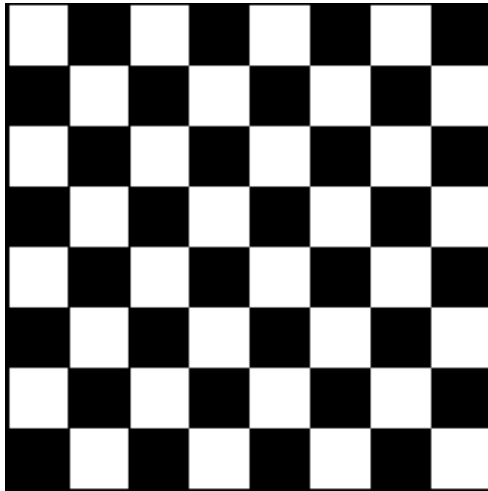
14. 圖中，一個長方形在一個邊長是 18cm 的正方形之內。若長方形的長是闊的兩倍，求長方形的面積。 (31 分)
 In the figure, a rectangle is within a square of each side 18 cm long. If the length of the rectangle is twice as its width, find the area of the rectangle. (31 marks)



15. 在以下地圖中，若你只可由A點往下走向B點，共有多少條不同的路綫？ (33 分)
 The diagram below shows a map. If you are only allowed to move downwards from point A to point B, how many different ways are there? (33 marks)



16. 下圖中是一個國際象棋棋盤，求棋盤中有多少個正方形？ (35 分)
 The figure below is a chess board. Find the number of squares in the chess board. (35 marks)



試卷完 END OF PAPER