

第三屆全港小學數學挑戰賽(2016-2017)
The 3rd Hong Kong Primary Mathematics Challenge (2016-2017)

初賽 (二零一六年十二月三日)
Semi-Final (3rd December, 2016)

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

1. 計算 $79999999 + 7999999 + 799999 + 79999 + 7999 + 799 + 79$ 。 (2 分)
Evaluate $79999999 + 7999999 + 799999 + 79999 + 7999 + 799 + 79$. (2 marks)

2. 計算 $2017 \times (1 - \frac{1}{2}) \times (1 - \frac{1}{3}) \times (1 - \frac{1}{4}) \times \dots \times (1 - \frac{1}{2017})$ 。 (3 分)
Evaluate $2017 \times (1 - \frac{1}{2}) \times (1 - \frac{1}{3}) \times (1 - \frac{1}{4}) \times \dots \times (1 - \frac{1}{2017})$. (3 marks)

3. 計算 HCF(6292, 1694) 的值。 (2 分)
Find the value of HCF (6292, 1694). (2 marks)

4. 已知2017年1月1日是星期日，那麼2017年9月1日是星期幾？ (3 分)
Given that January 1, 2017 is Sunday.
What day of the week is September 1, 2017? (3 marks)

5. 如果 $a \times b = 33$ ， $b \times c = 187$ ， $c \times a = 51$ ，而 a 、 b 、 c 都是正整數，求 a 、 b 、 c 三個數的和是多少？ (3 分)
If $a \times b = 33$ ， $b \times c = 187$ ， $c \times a = 51$ ，where a , b and c are positive integers, find the sum of a , b and c . (3 marks)

6. 已知 $m \times n = 2016$ ，而 m 、 n 為正整數。求 $m + n$ 的最小值。 (5 分)
It is given that $m \times n = 2016$ ，where m , n are positive integers.
Find the smallest value of $m + n$. (5 marks)

7. $74ab$ 是一個能被 9 整除的四位數，且 a 及 b 皆為奇數(單數)，求 a 的所有可能值。 (4分)
 $74ab$ is a 4-digit number which is divisible by 9 and both a and b are odd numbers. Find all the possible values of a . (4 marks)

8. 學生一個接一個地列隊，並企滿一個正方形操場，已知橫行和直行的學生人數相等，而操場的周界由 44 個學生排列而成，求學生總人數。 (5分)
Students are arranged one by one and queue up in a square playground. The number of students in each row and column are the same and 44 students stand on the perimeter of the playground. Find the total number of students. (5 marks)

9. 求 4^{2016} 被 7 除的餘數。 (4 分)
Find the remainder when 4^{2016} is divided by 7. (4 marks)

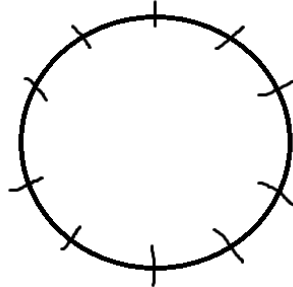
10. 圖中圓形的圓周上有 10 點，若用直線任意把 2 點連接起來，最多可連成多少條直線？

(5 分)

In the figure, there are 10 points on the circumference of a circle.

Find the maximum number of straight lines that can be formed by joining any 2 points.

(5 marks)



11. 將數字 1 至 9 分別填入以下方格內，使等式成立。

(5 分)

Put the numbers 1 to 9 in the following boxes to make the expression valid.

(5 marks)

$$\frac{\square}{\square\square} + \frac{\square}{\square\square} + \frac{\square}{\square\square} = 1$$

12. 約翰與爸爸和媽媽今年的年齡分別是 9 歲、36 歲和 34 歲。

(6 分)

求多少年後，爸爸和媽媽年齡的總和是約翰的 4 倍？

This year, John, his father and his mother are 9, 36 and 34 years old respectively.

After how many years will the sum of the ages of John's father and mother be

4 times that of John's age?

(6 marks)

13. 若 a 、 b 及 c 均為正整數，且 $a + b = 11$ 、 $b + c = 13$ 及 $a + c = 12$ ，

(5 分)

求 $a \times b \times c$ 的值。

If $a + b = 11$, $b + c = 13$ and $a + c = 12$, where a , b and c are positive integers,

find the value of $a \times b \times c$.

(5 marks)

14. 如果 100,000 秒相等於 A 小時 B 分鐘 C 秒，求 A 、 B 、 C 的值。

(5 分)

If 100,000 seconds equal to A hours B minutes and C seconds,

find the values of A , B and C .

(5 marks)

15. 將數字 1、2、3、4、5、7、8、9 填入以下等式的左邊，並將數字 1、2

(6 分)

、3、4、5、6、7、8、9 填入以下等式的右邊，使等式成立。

Put the numbers 1, 2, 3, 4, 5, 7, 8 and 9 on left hand side of the following

expression, and put 1, 2, 3, 4, 5, 6, 7, 8 and 9 on the right hand side to make

the expression valid.

(6 marks)

$$\square\square\square\square\square\square\square \times 6 = \square\square\square\square\square\square\square\square$$

16. 從 6 條長度分別為 3 cm、4 cm、5 cm、6 cm、7 cm、8 cm 的線段中，任意取 3 條組成三角形，能組成多少個不同的三角形？ (6 分)
 There are 6 strings in 3 cm, 4 cm, 5 cm, 6 cm, 7 cm and 8 cm. Choose any 3 strings to form a triangle. How many different triangles can be formed? (6 marks)

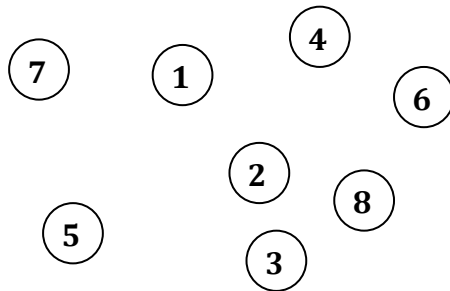
17. 求以下圖表中 a, b, c, d, e 的值。 (7 分)
 In the following table, find the values of a, b, c, d, e . (7 marks)

a	2	5	6	b
3	4	7	8	11
10	11	c	15	18
12	13	16	17	20
d	20	23	24	e

18. 求圖中 x 的值。 (8 分)
 In the following figure, find the value of x . (8 marks)

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

19. 使用不相交的曲線，將圖中的數字由 $1 \rightarrow 2 \rightarrow 3 \rightarrow \dots \rightarrow 8 \rightarrow 1$ 連接起來。 (7 分)
 Use curves to connect the following numbers from $1 \rightarrow 2 \rightarrow 3 \rightarrow \dots \rightarrow 8 \rightarrow 1$. The curves cannot intersect with each other. (7 marks)



20. 求圖中 x 和 y 的值。 (9 分)
 In the following figure, find the values of x and y . (9 marks)

■	□	★	□	21
□	■	★	⬠	18
★	★	□	★	35
□	★	□	□	y
21	26	30	x	

試卷完 END OF PAPER