

第一屆全港小學數學挑戰賽 (2014-2015)
The First Annual Hong Kong Primary Mathematics Challenge (2014-2015)

決賽 (二零一五年三月廿八日)
Final (28th March, 2015)

小四組	組別項目	題目紙
Primary 4	Group Event	Question Paper

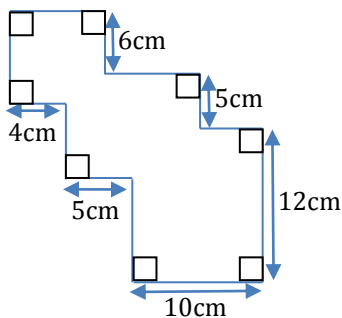
參賽者須知 Instructions to Contestants

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、隊伍編號、比賽試場、座位編號。
Write your name, class, admission number, team number, venue, 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 sheets 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 your working out.
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 in the form of fractions 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 risks 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

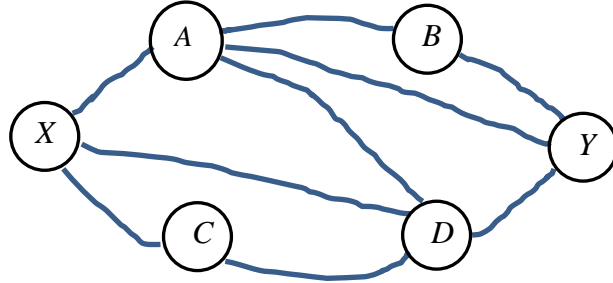
1. 7^{777} 的個位是多少？ (20 分)
What is the units digit of 7^{777} ? (20 marks)
2. 某一自然數除以 3 餘 2，除以 5 餘 3，除以 7 餘 2。這數的最小可能值是多少？ (25 分)
When a natural number is divided by 3, 5 and 7, the remainders are 2, 3 and 2 respectively. What is the least possible value of this number? (25 marks)
3. $8 \times 27 \times 125$ 的積有多少個不同的正因數？ (35 分)
How many positive factors of the product of $8 \times 27 \times 125$ are there? (35 marks)
4. 以「+」、「-」、「×」、「÷」或「()」將 6、8、9、9 組成答案為 24 的算式。 (20 分)
Arrange the numbers 6, 8, 9, 9 to make expressions equal to 24 by adding symbols +, -, ×, ÷ or (). (20 marks)
5. 在一份有 20 題多項選擇題的考卷中，答對一題可得 2 分，答錯則扣 1 分。美宜得 22 分，問她答錯多少題？ (20 分)
An exam paper consists of 20 multiple-choice questions. 2 marks are awarded for each correct answer and 1 mark is deducted for each wrong answer. If Sandy got 22 marks, how many questions did she answer wrongly? (20 marks)
6. 求下圖的周界。 (25 分)
Find the perimeter of the following figure. (25 marks)



7. 若 10 個連續正偶數的和是 210，求這 10 個數中的最大數的值。 (25 分)
If the sum of ten consecutive positive even numbers is 210, find the largest number of these 10 numbers. (25 marks)
8. 若 a 、 b 及 c 均為正整數，且 $a + b = 9$ 、 $b + c = 14$ 及 $a + c = 11$ ，求 $a \times b \times c$ 的值。 (30 分)
If $a + b = 9$, $b + c = 14$ and $a + c = 11$, where a , b and c are positive integers, find the value of $a \times b \times c$. (30 marks)

9. 一隻螞蟻要由 X 點走到 Y 點。它只可以沿著 A, B, C, D, X, Y 各點之間的連線走，而螞蟻只能通過每點最多一次，求有多少不同路線可由 X 點走到 Y 點。 (40 分)

An ant moving from point X to point Y follows the routes in the figure. If the ant may visit each point at most once, find the number of ways for the ant to move from X to Y . (40 marks)



10. 如圖所示，將 MATHEMATICS 各英文字母依次序填入一 50×50 的棋盤，求有星號(★)那一格所代表之字母。 (35 分)

The letters of MATHEMATICS are used to fill a 50×50 chessboard as shown below. Find the letter in the box marked with a ★. (35 marks)

	1	2	3	4	5	6	50
1	M	A	I	C	T	H			
2	H	T	T	S	A	E			
3	E	M	A	M	M	M			
4	E	H	T	A	S	A			
5	M	A	T	I	C	T			
6		...	M	S	C	I			
...									
...									
50									★

11. 在九張卡片上分別寫著 1 至 9 九個數字。A、B、C、D 四個學生每人拿了兩張卡片。

A 說：「我的兩張卡片上數字之和是 10」

B 說：「我的兩張卡片上數字之差是 5」

C 說：「我的兩張卡片上數字之積是 15」

D 說：「我的兩張卡片上數字之商是 2」

剩下的一張卡片上面寫著的數字是什麼？

(35 分)

There are 9 cards marked from 1 to 9. Four students A, B, C and D each take 2 cards.

A said, 'The sum of the two numbers of my cards is 10.'

B said, 'The difference of the two numbers of my cards is 5.'

C said, 'The product of the two numbers of my cards is 15.'

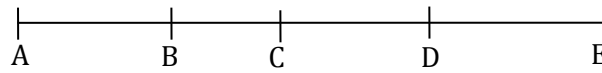
D said, 'The quotient of the two numbers of my cards is 2.'

What is the number marked on the unselected card?

(35 marks)

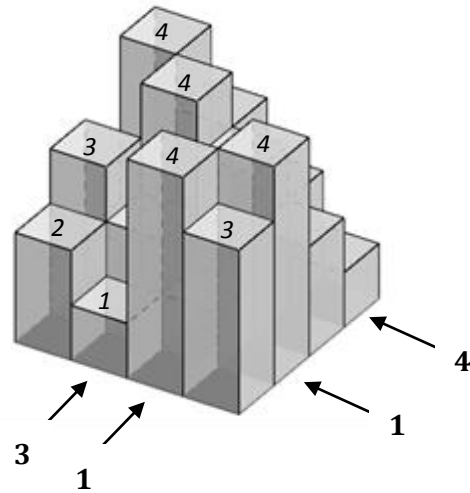
12. A、B、C、D、E 五個城市可依次排成一直線，若它們相互間的距離是 12 km、19 km、23 km、31 km、35 km、47 km、54 km、66 km、78 km、101 km。求 AB、BC、CD、DE 的距離。
(40 分)

A、B、C、D、E are 5 cities lying on a straight line. If the distances between them are 12 km, 19 km, 23 km, 31 km, 35 km, 47 km, 54 km, 66 km, 78 km and 101 km. Find the distances AB, BC, CD and DE.
(40 marks)



- 13.

	1 ↓		3 ↓		
1 →	4	3	2	1	← 4
	1	4	3	2	
2 →	3	2	1	4	← 1
	2	1	4	3	
		3 ↑	1 ↑		



在以上 4×4 的方格中，1 至 4 分別代表高度為 1 至 4 的柱子。右圖表示其對應的立體圖像。方格外圍的數字表示沿箭號方向可看見多少根柱子（‘3’表示可看到 3 根不同高度的柱子、‘4’表示可看到 4 根不同高度的柱子，高的柱子會遮蓋較矮的柱子）。每一行或列 1、2、3、4 只會出現一次。

In the above 4×4 table, 1 to 4 represents the pillar with height of 1 to 4 units respectively. The figure on the right side is the corresponding 3-dimensional diagram. The numbers surrounding the table tell you how many pillars you can see in the direction of the arrow. (‘3’ means 3 pillars with different heights can be seen, ‘4’ means 4 pillars with different heights can be seen, you can’t see a shorter pillar behind a taller one.) Every row/column contains 1 to 4 exactly once.

根據以上的規則，將 1 至 4 填入以下 4×4 的方格中。

(50 分)

According to the rules, fill 1 to 4 into the following 4×4 table.

(50 marks)

	4 ↓	2 ↓	1 ↓	2 ↓	
3 →					← 2
2 →					← 3
2 →					← 1
1 →					← 2
	1 ↑	3 ↑	3 ↑	2 ↑	

試卷完 END OF PAPER