

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

決賽 (二零一七年四月一日)
Final (1st April, 2017)

小六組 個人項目 試卷
Primary 6 Individual Event Question Paper

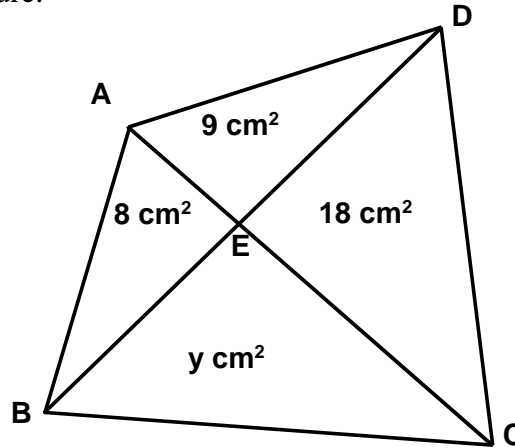
參賽者須知 Instructions to Contestants

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

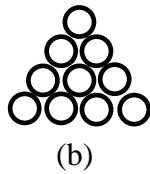
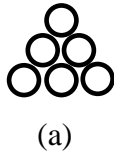
總分：100
Total marks: 100

- 求 $1^2 + 2^2 + 3^2 + \dots + 99^2$ 的個位數。
Find the unit digit of $1^2 + 2^2 + 3^2 + \dots + 99^2$. (2 分)
(2 marks)
- 求圖中 y 值。
Find the value of y in the figure. (2 分)
(2 marks)



- 若一款手提電話以其標價的九折和九三折出售，相差 114 元。求這款手提電話的標價。
If a mobile phone is sold at the discounts 10% and 7% of its marked price, the difference is \$114. Find the marked price of the mobile phone. (3 分)
(3 marks)
- 一件實心正立方體邊長 9 cm。現將這正立方體表面全部塗上紅色，然後分割成邊長 3 cm 的全等小正立方體。求這些小正立方體沒有塗上紅色的總面積。
The surface of a solid cube with length 9 cm is painted with red colour. Then the cube is cut into identical smaller cubes with length 3 cm. Find the total area of the surfaces of the smaller cubes that without red colour. (3 分)
(3 marks)
- 已知 $m \times n = 1984$ ，而 m 、 n 為正整數。求 $m + n$ 的最小值。
It is given that $m \times n = 1984$, where m, n are positive integers. Find the smallest value of $m + n$. (4 分)
(4 marks)
- 小明擁有 18 個郵票，它們的面值為 5 元、1.1 元及 3 角。已知郵票的總值為 \$20.4，求面值 3 角郵票的數量。
Siu Ming has a total of 18 stamps, each of face value \$5, \$ 1.1 or 30 cents. Given that the total value of the stamps is \$ 20.4, find the total number of 30 cents stamps. (5 分)
(5 marks)

7.



如圖 (a) 的外圍是 6 個圓形，而圖 (b) 的外圍是 9 個圓形；如要組成外圍是 57 個圓形的圖形，總共要用多少個圓形？ (5 分)

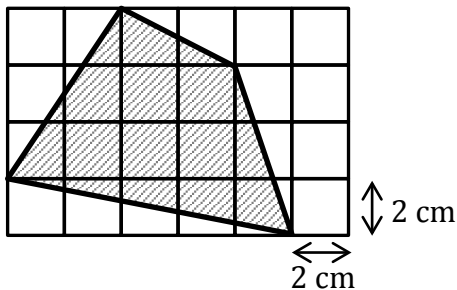
The number of circles of the outer layer in figure (a) and (b) are 6 and 9 respectively.

Find the total number of circles should be used to form the figure with 57 circles in the outer layer. (5 marks)

8. 求下圖陰影部份面積。

(5 分)

Find the area of the shaded region of the following figure. (5 marks)



9. 將一批糖果分給數名小孩，若每人分 9 粒，將餘下 4 粒。若每人分 10 粒，將有一位小孩只得 3 粒。問這批糖果共有多少粒？ (5 分)

A lot of candies are distributed to some kids. If each kid gets 9 candies, 4 candies will be left.

If each kid gets 10 candies, then one of the kids can get only 3 candies.

How many pieces of candies are there? (5 marks)

10. 如果 $\frac{A \ B \ C}{1 \ 3 \ 5 \ 7}$ ，而 $A、B、C、D、E、F$ 皆為不同的數值，

求 $A+B+C+D+E+F$ 的最大值。 (5 分)

If $\frac{A \ B \ C}{1 \ 3 \ 5 \ 7}$, where A, B, C, D, E and F are different numbers,

find the greatest value of $A+B+C+D+E+F$. (5 marks)

11. 5 隻杯及 4 隻碗的售價為 275 元，而 3 隻杯的售價與 2 隻碗的售價相同。現小明購買 2 隻杯及 3 隻碗，他要付款多少？ (5 分)

The price of 5 cups and 4 bowls is \$ 275 . Moreover, the price of 3 cups and the price of 2 bowls are the same. Now Siu Ming buys 2 cups and 3 bowls.

How much should he pay ? (5 marks)

12. 設 N 為正整數，當 20170401 減去 N 後，所得的數可同時被 2、4、5 和 7 整除。
求 N 的最小值。 (6 分)
Let N be a positive integer. When N is subtracted from 20170401, the result is divisible
by 2, 4, 5 and 7. Find the least value of N . (6 marks)

13. 於下列方格內填上 '+', '-', '×' 或 '÷', 使算式成立。 (6 分)
Fill in the boxes with '+', '-', '×' or '÷', so that the statement is valid. (6 marks)

$$9 \square 8 \square 7 \square 6 \square 5 \square 4 \square 3 \square 2 = 1$$

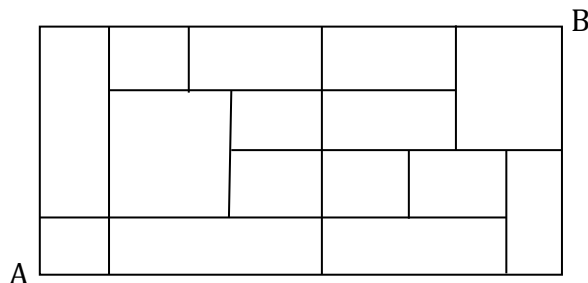
14. 從 7 條長度分別為 3cm、4cm、5cm、6cm、7cm、8cm、9cm 的線段中，取 3 條組成
三角形，能組成多少個不同的三角形？ (6 分)
There are 7 strings in 3cm, 4cm, 5cm, 6cm, 7cm, 8cm and 9cm. Choose 3 strings to form a
triangle. How many different triangles can be formed? (6 marks)

15. 若 $\frac{328}{153} = x + \frac{1}{y + \frac{1}{1 + \frac{1}{z}}}$ ，而且 x 、 y 、 z 是正整數。求 x 、 y 、 z 的值。 (7 分)

If $\frac{328}{153} = x + \frac{1}{y + \frac{1}{1 + \frac{1}{z}}}$, where x , y and z are positive integers.

Find the values of x , y and z . (7 marks)

16. 若只可向右走或向上走，下圖中由 A 點至 B 點共有多少種不同的路綫？ (7 分)
The diagram below shows a map. If you are only allowed to move rightwards or upwards from
point A to point B. How many ways are there? (7 marks)

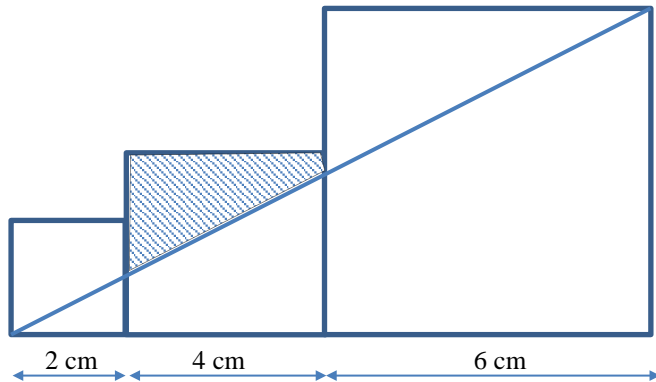


17. 圖中所示為三個正方形。求陰影部份面積。

(7 分)

The figure shows 3 squares. Find the area of the shaded region.

(7 marks)

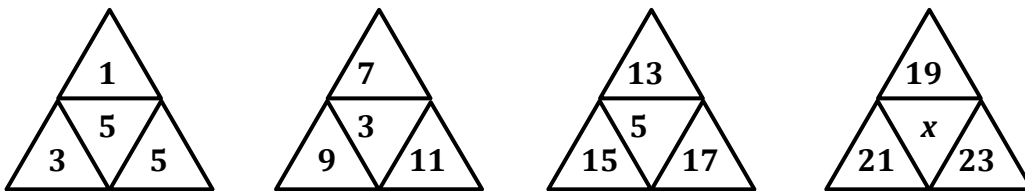


18. 求圖中 x 的值。

(8 分)

In the following figure, find the value of x .

(8 marks)



19. 現有 n 個連續正整數，它們的和是 2046，求 n 的最大值。

(9 分)

There are n consecutive positive integers. Their sum is equal to 2046 .

For the maximum value of n .

(9 marks)

試卷完 END OF PAPER