



2019 Hong Kong Mathematics Kangaroo Contest

— Ecolier —

2019香港數學袋鼠競賽

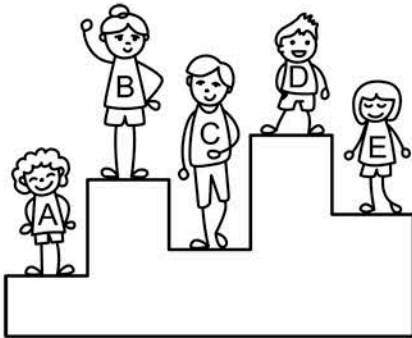
【小學中年級】

Instruction 說明


1. DO NOT FLIP OPEN THIS FRONT COVER UNTIL YOUR PROCTOR TELLS YOU.
在未收到監考老師指示前，請不要翻開此封面。
2. This is a 24 question multiple choice test. For each question, only one answer choice is correct.
這是一套包括24道選擇題的測試，每道題目只有一個正確答案。
3. Each question is given a point value. You will receive full points for correct answer, and zero point for blank or incorrect answer. The full score of this test is 96 points.
每道題目都有給定的分值，答對得滿分，答錯或空白得0分。本次測試的滿分為96分。
4. Mark your answer to each problem on the answer form with a #2 pencil. Check the blackened circles for accuracy and erase errors and stray marks completely. Only answers properly marked on the answer form will be scored.
請將每道題目的答案用#2鉛筆標註在答題卡上。請注意檢查塗寫的黑色圓圈的準確性，用橡皮完全擦掉錯誤的答案和多餘的標記。只有恰當標註在答題卡上的答案才會被評分。
5. Only scratch paper, graph paper, rulers, protractors, and erasers are allowed as aids. Calculators are NOT allowed. No problems on the test *require* the use of a calculator.
只能使用草稿紙、方格紙、尺、量角器和橡皮作為輔助工具。計算器是不允許使用的。測試中沒有任何問題必須需要使用計算器。
6. Figures are not necessarily drawn to scale.
圖形不一定按比例繪製。
7. Before beginning the test, make sure to record your name, school name and Competition ID on the answer form, especially to bubble in the 8-digit Competition ID completely!
在開始測試之前，請確保已將你的名字，校名和准考證號填寫在答題卡上，特別是8位准考證號的每位數字已經塗好相應的黑色圓圈。
8. You will have 75 minutes to complete the test once your proctor tells you to begin.
監考老師宣布開始後，你將有75分鐘的時間完成測試。


Part 1: 8 problems, 3 points each | 第一部分：8道題目，每題3分






1. The higher the step on the podium, the higher the rank of the runner. Who finished third?
領獎台上站的台階越高，跑步者的排名越靠前。問誰是第三個跑完的？



- (A) A (B) B (C) C (D) D (E) E

2. In the pictures, each dot stands for 1 and each bar stands for 5. For example,  stands for 8. Which picture stands for 12?

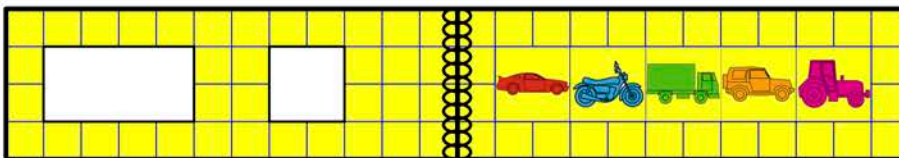
在圖中，每個點代表1，每個長條代表5。例如  代表8。問哪張圖片代表12？

- (A)  (B)  (C)  (D)  (E) 






3. Yesterday was Sunday. What day is tomorrow?
昨天是星期天。明天是星期幾？

- (A) Tuesday 星期二 (B) Thursday 星期四 (C) Wednesday 星期三
(D) Monday 星期一 (E) Saturday 星期六

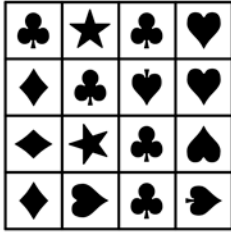
4. There are two holes in the cover of a book. When the book is open, it looks like this:
書的封面上有兩個洞。當這本書打開時，它看起來像這樣：



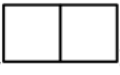
Which pictures does Olaf see through the holes when he closes the book?
當Olaf把這本書合上時，他會看到哪些圖片？

- (A)  , (B)  , (C) 
(D)  , (E) 

5.



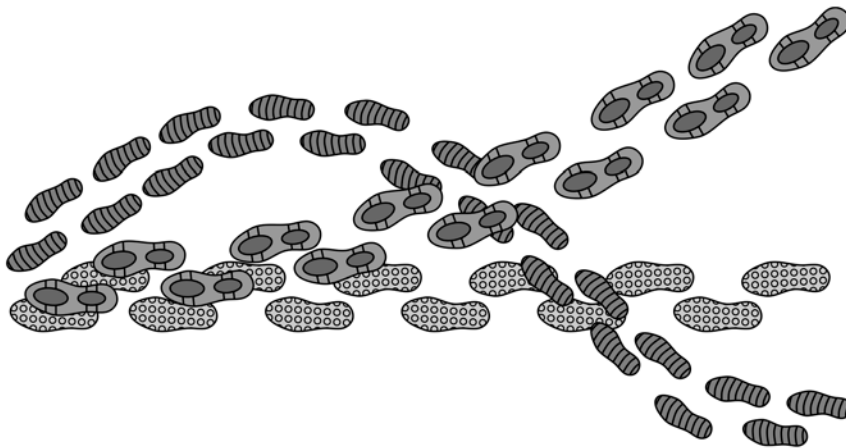
Karina cuts out one piece like this from the sheet above. Which piece can she get?

Karina從上圖中切出像這樣的一片，那麼哪一塊是她有可能得到的？

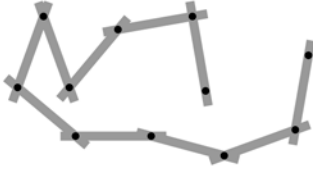


6. Three people walked across a field of snow wearing muddy shoes. In which order did they do this?

三個人穿著泥濘的鞋子走過一片雪地。他們是按什麼順序做的？

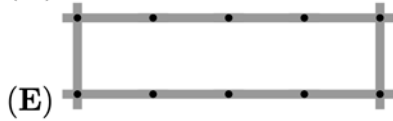
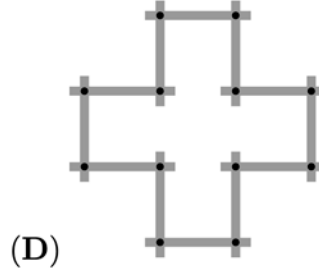
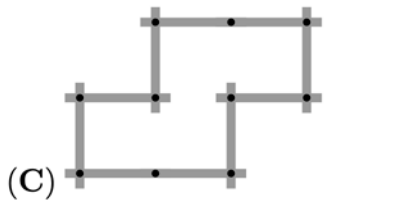
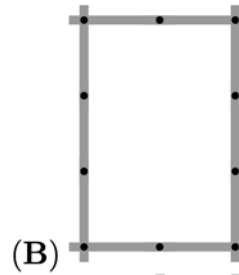
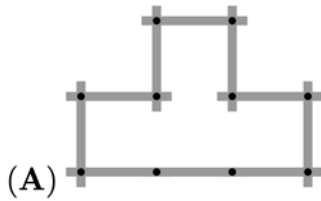


7.



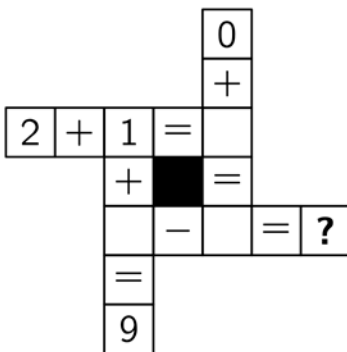
Pia makes shapes with the connected sticks shown above in the picture. Which of the following shapes needs more sticks than Pia has?

Pia將木棒連接在一起形成如上圖所示的形狀。組成下面哪個形狀需要使用比Pia現在有的還多的木棒？



8. What number should replace the question mark when all the calculations are completed correctly?

如果所有的計算都正確的話，哪個數應該代替問號？



(A) 4

(B) 5

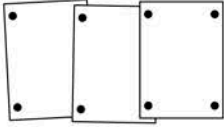
(C) 6

(D) 7

(E) 8

Part 2: 8 problems, 4 points each | 第二部分：8道題目，每題4分

9.

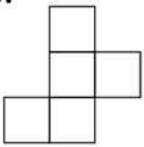


Linda pinned up 3 photos in a row on a cork board using 8 pins. Peter wants to pin up 7 photos in the same way. How many pins does he need?

Linda在軟木板上使用8個大頭針在一行上固定了3張照片。Peter想以同樣的方式固定7張照片。他需要多少個大頭針？

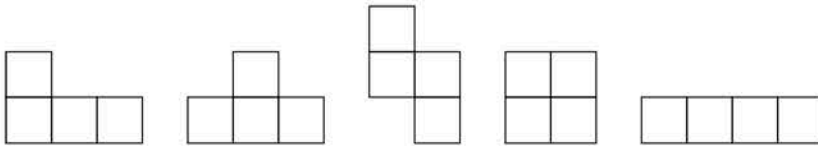
- (A) 14 (B) 16 (C) 18 (D) 22 (E) 26

10.



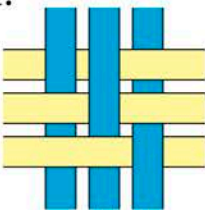
Dennis wants to remove one cell from the above shape. How many of the following shapes can he get?

Dennis想從上面的形狀中刪除一個單元格。他可以獲得下面形狀中的幾種？



- (A) 1 (B) 2 (C) 3 (D) 4 (E) 5

11.



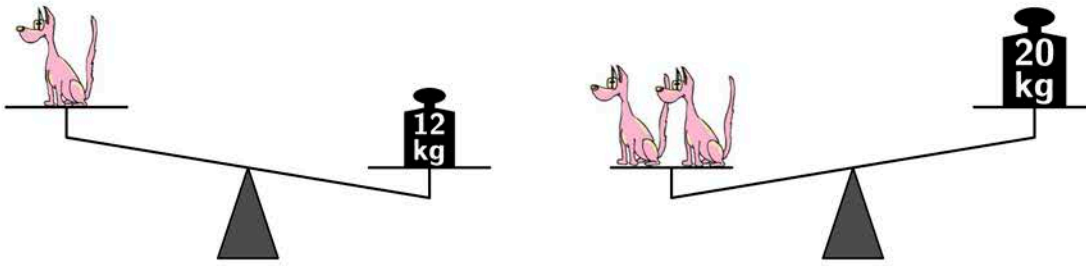
Six strips are woven into a pattern as shown above. What does the pattern look like from the back?

如上圖所示，六條帶子編織成一個圖案。這個圖案從背面看是什麼樣？

- (A) (B) (C) (D) (E)

12. The weight of dog toy is a whole number in kilograms. How many kilograms does one dog toy weigh? ("kg" is the abbreviation for kilograms.)

玩具狗的重量是整數千克。問一隻玩具狗的重量是多少千克？(kg是千克的簡稱。)



- (A) 7 (B) 8 (C) 9 (D) 10 (E) 11

13. Sara has 16 blue marbles. She can trade marbles in two ways: 3 blue marbles for 1 red marble or 2 red marbles for 5 green marbles. What is the maximum number of green marbles she can get?

Sara有16個藍色玻璃球。她可以通過兩種方式交換玻璃球：3個藍色玻璃球可以換1個紅色玻璃球，或者2個紅色玻璃球可以換5個綠色玻璃球。問她最多可以獲得多少個綠色玻璃球？

- (A) 5 (B) 10 (C) 13 (D) 15 (E) 20

14.

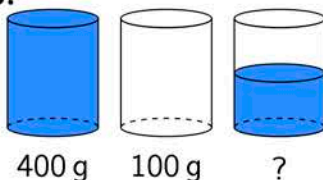
$$\square \square \square + ?$$

Steven wants to write each of the digits 2, 0, 1 and 9 in one of the boxes of the sum. He wants to get the largest possible answer. Which digit could he write instead of the question mark?

Steven想要在將數字2, 0, 1和9分別填在加法算式的每一個方框中。他希望獲得盡可能大的答案。那麼他可以將問號替換為哪個數字？

- (A) Either 0 or 1 0或者1 (B) Either 0 or 2 0或者2 (C) Only 0 只能是0
(D) Only 1 只能是1 (E) Only 2 只能是2

15.



A full glass of water weighs 400 grams. An empty glass weighs 100 grams. How many grams does a half-full glass of water weigh?

一整杯水重400克。一空杯重100克。那麼一杯半的水重多少克？

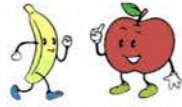
- (A) 150 (B) 200 (C) 225 (D) 250 (E) 300

16.



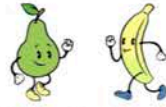
Together we cost 5 cents.

我們一起
值5美分



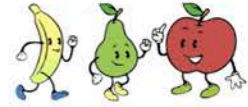
Together we cost 7 cents.

我們一起
值7美分



Together we cost 10 cents.

我們一起
值10美分



How much do we cost together?

我們在一起
值多少錢？

- (A) 8 cents 美分
- (D) 11 cents 美分

- (B) 9 cents 美分
- (E) 12 cents 美分

- (C) 10 cents 美分

Part 3: 8 problems, 3 points each | 第三部分：8道題目，每題5分

17. Each shape stands for a different number. The sum of the three numbers in each row is shown to the right of the row.

每個形狀代表不同的數。每行中三個數的總和顯示在行的右側。

			15
			12
			16

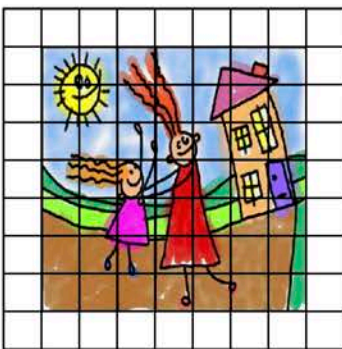
Which number does the stand for?

那麼 代表幾？

- (A) 2
- (B) 3
- (C) 4
- (D) 5
- (E) 6

18. Anna used 32 small white squares to frame a 7 by 7 picture.

Anna使用了32個白色小方塊來給一張7乘7的畫加框。



How many of these small white squares does she need to frame a 10 by 10 picture?

那麼給10乘10的畫加框，她需要多少個白色小方塊？

- (A) 36
- (B) 40
- (C) 44
- (D) 48
- (E) 52

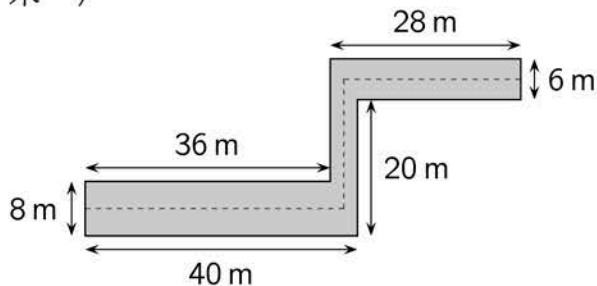
19. The pages of a book are numbered 1, 2, 3, 4, 5 and so on. The digit 5 appears exactly 16 times. What is the maximum number of pages this book could have?

書的頁面的編號為1, 2, 3, 4, 5, 並一直繼續。數字5恰好出現了16次。這本書最多可以有多少頁?

- (A) 49 (B) 64 (C) 66 (D) 74 (E) 80

20. A hallway has the dimensions shown in the picture. A cat walks on the dashed line along the middle of the hallway. How many metres does the cat walk? (m stands for meter.)

走廊的尺寸如圖所示。一隻貓在走廊中間的虛線上走。問貓走了多少米? (m表示米。)



- (A) 63 (B) 68 (C) 69 (D) 71 (E) 83

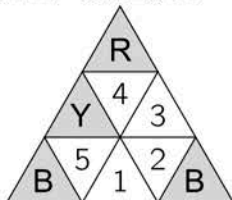
21. In a park there are 15 animals: cows, cats and kangaroos. We know that precisely 10 are not cows and precisely 8 are not cats. How many kangaroos are in the park?

在公園裡有15只動物：牛，貓和袋鼠。我們很準確地知道，恰好有10只不是牛，恰好有8只不是貓。問公園裡有多少只袋鼠?

- (A) 2 (B) 3 (C) 4 (D) 8 (E) 10

22. Mary has 9 small triangles: 3 of them are red (R), 3 are yellow (Y) and 3 are blue (B). She wants to form a big triangle by putting together these 9 small triangles so that any two triangles with an edge in common are different colours. Mary places some small triangles as shown in the picture. Which of the following statements is true after she has finished?

Mary有9個小三角形：其中3個是紅色(R)，3個是黃色(Y)，3個是藍色(B)。她希望將這9個小三角形組合在一起形成一個大三角形，任何兩個有公共邊的小三角形都是不同的顏色。如圖所示，Mary放置了一些小三角形。在完成後，以下哪項陳述是正確的?



- (A) 1 is yellow and 3 is red 1是黃色而3是紅色
 (B) 1 is blue and 2 is red 1是藍色而2是紅色
 (C) 1 and 3 are red 1和3是紅色
 (D) 5 is red and 2 is yellow 5是紅色而2是黃色
 (E) 1 and 3 are yellow 1和3是黃色

23. One of five children Alek, Bartek, Czarek, Darek and Edek has eaten a cookie.

Alek says: "I haven't eaten a cookie."

Bartek says: "I have eaten a cookie."

Czarek says: "Edek hasn't eaten a cookie."

Darek says: "I haven't eaten a cookie."

Edek says: "Alek has eaten a cookie."

Only one child lies. Who has eaten the cookie?

在Alek, Bartek, Czarek, Darek和Edek五孩子中, 有一人吃了一干。

Alek說: "我沒有吃過餅乾。"

Bartek說: "我吃了餅乾。"

Czarek說: "Edek沒有吃過餅乾。"

Darek說: "我沒有吃過餅乾。"

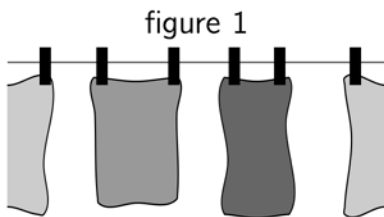
Edek說: "Alek吃了餅乾。"

只有一個孩子在撒謊。問誰吃了餅乾?

- (A) Alek (B) Bartek (C) Czarek (D) Darek (E) Edek

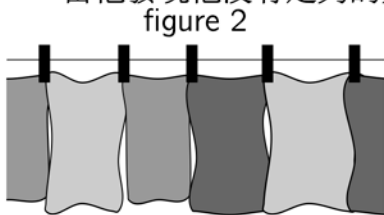
24. Emil started to hang up towels using two pegs for each towel as shown in figure 1.

如圖1所示, 開始時Emil每條毛巾用兩個夾子掛起。



He realised that he would have not enough pegs and began to hang up the towels as shown in figure 2.

當他發現他沒有足夠的夾子時, 他開始用如圖2所示的方式掛毛巾。



Overall, he hung up 35 towels and used 58 pegs. How many towels did Emil hang up in the way shown in figure 1?

總的來說, 他掛了35條毛巾, 並使用了58個夾子。問按照如圖1所示的方式, Emil掛了多少條毛巾?

- (A) 12 (B) 13 (C) 21 (D) 22 (E) 23