

Mathematics Questions 數學題

1. There are three black balls and two white balls in a bag. Two balls are drawn from the bag randomly (without replacement). What is the probability that the two balls are of different colour? (1 mark)

一個袋子有 3 個黑球及 2 個白球，從該袋子隨機同時抽出 2 個球，求抽出兩個不同顏色的球的概率? (一分)

- (A) $\frac{3}{10}$
(B) $\frac{6}{10}$
(C) $\frac{6}{25}$
(D) None of the above 全部皆非

Answer 答案: _____

2. Referring to the above question, what is the probability that at least one of the two balls is white? (2 marks)

依上題所示，求抽出至少 1 個是白球的概率? (兩分)

IQ Questions 智商題

3. Consider the following sequence 考慮下列數列 (sequence)

8, 10, 7, 11, 6, 12, _____.

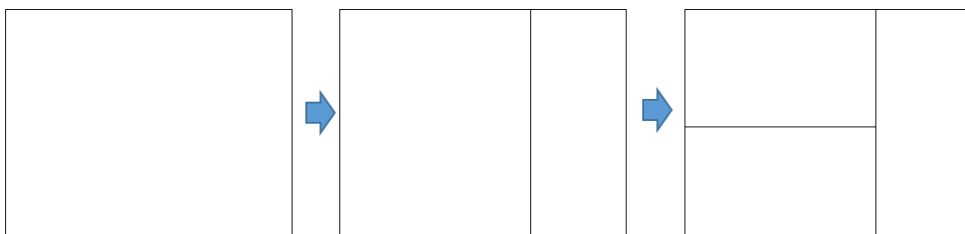
What is _____? (1 mark) 空格 _____ 是? (一分)

- (A) 4
(B) 5
(C) 6
(D) 9

Answer 答案: _____

4. Consider the cutting of a 1 meter by 1 meter square card into 3 pieces with equal area. Suppose the following rules should be enforced during cutting: i) The cut must be either straight or horizontal; ii) Every cut should increase the number of pieces by 1. The following diagram shows one way to cut the card.

把一張 $1\text{ m} \times 1\text{ m}$ 之正方形咭紙分為三個面積相等之部份，執行切割之規則如下： i) 切割必須是垂直線或水平線; ii) 每次切割只能增加一個部份。下圖為其中一個切割方法



Smallest sum of the perimeter for the three pieces: (2 marks)

三個部份周界的最少總和：(兩分)

Logic Questions 邏輯題

5. Three friends Bob, Kevin and Stuart are sitting in a row. Bob and Kevin have two eyes and Stuart has one eye. Bob is the youngest among the three. The one sitting in the middle has only one eye. The oldest person sits on the side. So who is the oldest person? (1 mark)

三位朋友 Bob, Kevin 及 Stuart 坐在一排，Bob 及 Kevin 為視力正常人仕，但 Stuart 則為單眼人仕。Bob 為三者中年紀最小的一位，坐在三者中間的為單眼人仕，年紀最大一位坐在旁邊，請問年紀最大一位是？(一分)

- (A) Bob
(B) Kevin
(C) Stuart
(D) Cannot be determined 不能判定

6. The Disney characters like to play with mathematics among themselves. They use eight letters to represent the eight digits 12345678 in encoding their names. From the following calculation, determine what **MICE** means. Here, **MICE** represents a 4-digit number and both **MICKEY** and **MINNIE** represent two 6-digit numbers.

迪士尼角色 (Disney) 之名字/文字可作數學遊戲，它以 8 個字母分別代表數值 12345678 其中一值，來為名字作編碼。利用下列計算找出文字 **MICE** 的含意。**MICE** 代表 4 位數字，**MICKEY** 及 **MINNIE** 兩者代表分別代表兩個 6 位數字。

$$\begin{array}{r} \text{MICKEY} \\ - \text{MINNIE} \\ \hline \text{MICE} \end{array}$$

Note that there are only 7 distinct letters, so one of the digits is not used. Mickey reveals that the letter **K** stands for the digit **4**, and Minnie also reveals that the letter **N** stands for the digit **5**. They jointly announce that the letter **M** stands for the digit **1** and the letter **I** stands for the digit **8**. Simplifying, we have $\text{CKEY} - \text{NNIE} = \text{MICE}$, or $\text{NNIE} + \text{MICE} = \text{CKEY}$, i.e. $558E + 18CE = C4EY$. Thus, the letters C, E, Y represent three of the four remaining digits 2, 3, 6, 7 in some way. Find the 4-digit number that **MICE** represents. (2 marks)

請注意只有 7 個不同字母，所以有一個數字並沒有被使用。Mickey 披露字母 **K** 代表數值 **4**，及 Minnie 披露字母 **N** 代表數值 **5**。他們亦公佈字母 **M** 代表數值 **1** 及字母 **I** 代表數值 **8**。簡單來說，我們有 $\text{CKEY} - \text{NNIE} = \text{MICE}$ ，或 $\text{NNIE} + \text{MICE} = \text{CKEY}$ ，即如 $558E + 18CE = C4EY$ 。因此，字母 C, E, Y 分別代表其餘 4 個數值 2, 3, 6, 7 之其中 3 個。找出 **MICE** 代表之 4 位數字。(兩分)

Your answer 您的答案: MICE = _____

ANSWERS

1. B (6/10)
2. 7/10
3. B (5)
4. 7.3333 m
5. B (Kevin)
6. 1876