

## Upper Primary Division

## Questions 1 to 10, 3 marks each

1-10 題，每題 3 分

1. Marlie was born in 2016. In which year will she turn 14?

小瑪出生於 2016 年，請問她將於哪一年迎來她的 14 歲？

- (A) 2026      (B) 2028      (C) 2030      (D) 2032      (E) 2034

2. A square has area  $16 \text{ cm}^2$ . What is its perimeter in centimetres?

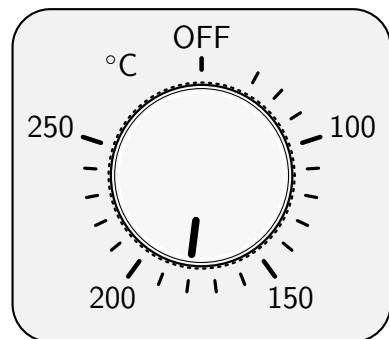
一個正方形的面積是  $16 \text{ cm}^2$ 。請問它的周長是多少 cm？

- (A) 4      (B) 8      (C) 12      (D) 16      (E) 24

3. Evan set the temperature dial on his oven as shown.

What temperature is it set to?

小伊將烤箱溫度調到如圖所示的位置。請問他設定的溫度是多少？



- (A)  $155^\circ\text{C}$       (B)  $170^\circ\text{C}$       (C)  $180^\circ\text{C}$       (D)  $220^\circ\text{C}$       (E)  $230^\circ\text{C}$

4. At a theme park, one ride costs \$8. How many rides can Sally buy with her \$65?

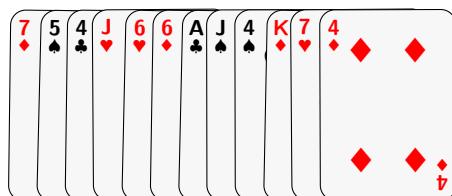
在一個主題公園，玩 1 次遊樂項目需要花費 8 美元。小莎有 65 美元，請問她可以玩幾次遊樂項目？

- (A) 5      (B) 6      (C) 7      (D) 8      (E) 9

5. If I choose one of these cards at random, which of the following am I least likely to get?

如果我從這些卡牌中隨機抽取一張，請問抽到下列哪一張牌的概率最小？

- (A) A four 一張 4  
 (B) A seven 一張 7  
 (C) A spade ♠ 一張黑桃 ♠  
 (D) A heart ♥ 一張紅心 ♥  
 (E) A diamond ♦ 一張方塊 ♦



6. The following decimals are to be placed in increasing order.

將下列小數按照從小到大的順序排列。

0.42 0.24 4.02 2.4 0.042

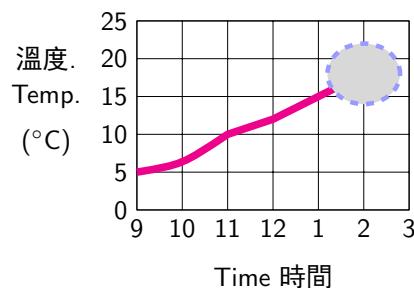
Which number will be in the middle position?

請問排在中間位置的是哪一個數字?

- (A) 0.42 (B) 0.24 (C) 4.02 (D) 2.4 (E) 0.042

7. This graph shows the temperature throughout the school day, but part of it has been hidden. The hottest part of the day is at 2 pm. What does the missing section of the graph look like?

這張圖表記錄了某個上學日的氣溫變化，但部分數據被隱藏了。已知當天下午 2 點的溫度最高。請問圖中缺失部分呈現怎樣的趨勢?



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

8. Leila has found out three facts about the speeds of her four favourite fast birds:

小萊最喜歡的 4 種鳥類的飛行速度都很快，她發現了以下三個事實：

- The spur-winged goose (SWG) is slower than the white-throated needletail (WTN).  
距翅雁 (SWG) 的飛行速度比白喉針尾雨燕 (WTN) 慢。
- The peregrine falcon (PF) is the fastest bird.  
遊隼 (PF) 是飛行速度最快的鳥類。
- The frigate bird (FB) is faster than only one of the other birds.  
軍艦鳥 (FB) 的飛行速度僅比其他一種鳥類快。

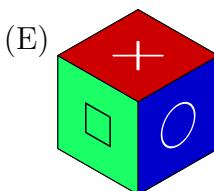
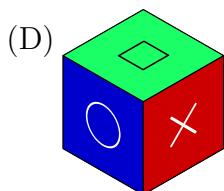
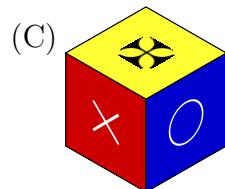
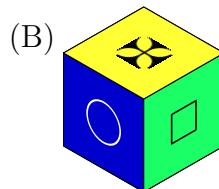
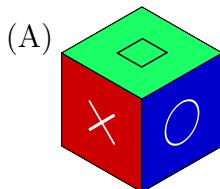
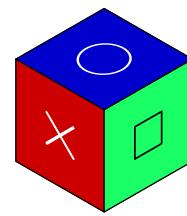
Which of the following lists gives the birds from fastest to slowest?

請問下列哪個選項將這 4 種鳥類按照其飛行速度從快到慢進行了排序?

- (A) SWG (距翅雁), WTN (白喉針尾雨燕), PF (遊隼), FB (軍艦鳥)  
 (B) PF (遊隼), SWG (距翅雁), FB (軍艦鳥), WTN (白喉針尾雨燕)  
 (C) PF (遊隼), WTN (白喉針尾雨燕), SWG (距翅雁), FB (軍艦鳥)  
 (D) FB (軍艦鳥), PF (遊隼), WTN (白喉針尾雨燕), SWG (距翅雁)  
 (E) PF (遊隼), WTN (白喉針尾雨燕), FB (軍艦鳥), SWG (距翅雁)

9. The cube pictured has six different faces. Which of the following is **not** a possible picture of this cube?

如圖所示，該立方體擁有六個不同的面。請問在下列選項中，哪一個不可能是這個立方體的視圖？



10. In Primeland, they use coins worth \$2, \$3 and \$5. Which of the following totals is **not** possible using exactly 3 coins?

在普萊姆蘭地區，人們使用面額為 2 美元、3 美元和 5 美元的硬幣。請問僅用 3 枚硬幣無法湊成下列哪一金額？

(A) \$6

(B) \$8

(C) \$10

(D) \$12

(E) \$14

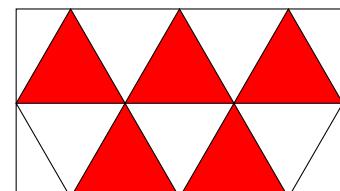
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Questions 11 to 20, 4 marks each

11-20 題，每題 4 分

11. What fraction of this rectangle is shaded?

請問陰影部分在該矩形中的占比是多少？



(A)  $\frac{1}{2}$

(B)  $\frac{5}{12}$

(C)  $\frac{1}{3}$

(D)  $\frac{2}{5}$

(E)  $\frac{5}{9}$

12. The *Balga* is a grass tree found in south-western Australia.

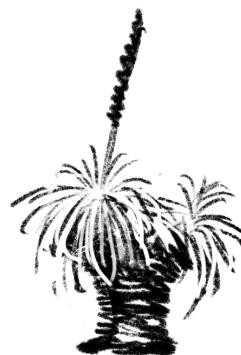
Balgas grow between 1 and 2 centimetres taller each year.

Approximately how old is a Balga that is 4 metres tall?

巴爾加是一種生長在澳大利亞西南部的草樹，每年可以長高

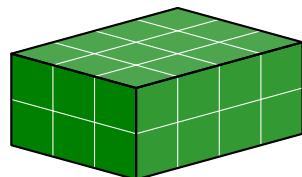
1 cm 到 2 cm。請問一棵巴爾加草樹大約需要幾年才能長到 4 m?

- (A) 10 years 10 年  
(B) 30 years 30 年  
(C) 60 years 60 年  
(D) 300 years 300 年  
(E) 1000 years 1000 年



13. A rectangular block measures  $4 \times 3 \times 2$  in centimetres. All of its surfaces are painted and then it is cut into 24 cubes of side length 1 centimetre. How many cubes have exactly one face painted?

將一個  $4 \text{ cm} \times 3 \text{ cm} \times 2 \text{ cm}$  的長方體表面都塗上油漆後，再切割成 24 個邊長為 1 cm 的立方體。請問有多少個立方體恰好只有一面被塗上了油漆？



- (A) 4 (B) 8 (C) 12 (D) 18 (E) 24

14. James convinces his parents to start a new plan for paying him pocket money. In week 1, they will give him 10 cents and every week after that, they will double the amount they pay him. In which week will he first receive more than \$10 pocket money?

小詹成功說服他的父母啟動一項新的零用錢計劃。在計劃的第 1 週，小詹會獲得 10 美分的零用錢。從第 2 週開始，每週的零用錢將是前一週的兩倍。請問小詹在第幾週收到的零用錢將首次超過 10 美元？

- (A) 6 (B) 7 (C) 8 (D) 9 (E) 10

15. A shop has a special deal where you can buy two different items and get the cheaper item at half price. Roberta bought two of these items, and paid \$16. Which two items did she buy?

商店推出了一項優惠活動：若選購兩種不同的商品，其中價格較低的商品可半價購買。  
小羅買了以下兩件商品，並支付了 16 美元。請問她買了哪兩件商品？

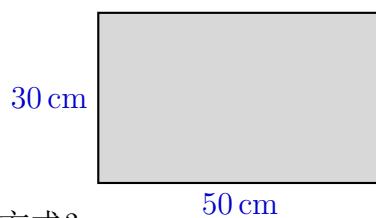
Magazines \$6 each	Gift cards \$12 each	Books \$10 each	Birthday cards \$4 each	Wrapping paper \$8 each
每本雜誌 6 美元	每張禮品卡 12 美元	每本書 10 美元	每張生日賀卡 4 美元	每卷包裝紙 8 美元

- (A) A birthday card and a magazine 一張生日賀卡和一本雜誌  
 (B) A gift card and a birthday card 一張禮品卡和一張生日賀卡  
 (C) A book and a roll of wrapping paper 一本書和一卷包裝紙  
 (D) A gift card and a roll of wrapping paper 一張禮品卡和一卷包裝紙  
 (E) A magazine and a roll of wrapping paper 一本雜誌和一卷包裝紙

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16. Chester has 5 identical tiles, each measuring 10 cm by 30 cm. He wants to tile the area shown with these tiles. In how many different ways can he do this?

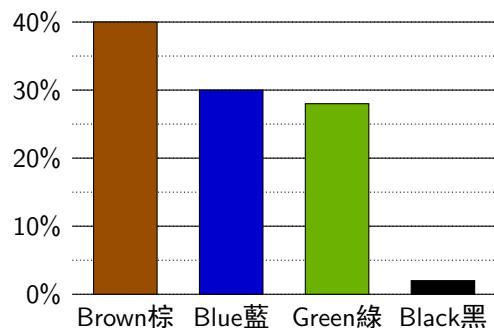
小陳有 5 塊尺寸為  $10 \text{ cm} \times 30 \text{ cm}$  的瓷磚。他想用這些瓷磚來鋪設如圖所示區域。請問他有多少種不同的鋪設方式？



- (A) 2 (B) 4 (C) 6 (D) 8 (E) 10

17. This graph shows the percentages of different eye colours of the students in Year 6. In Year 6, 48 students have brown eyes. What is the total number of students in Year 6?

該圖表記錄了六年級學生中不同眼睛顏色的人數比例。已知棕色眼睛的學生有 48 人。請問六年級總共有多少名學生？





18. The number 15 is divisible by its unit digit, that is,  $15 \div 5 = 3$ . How many whole numbers between 20 and 50 have this property?

數字 15 能夠被其個位數整除，即  $15 \div 5 = 3$ 。請問 20 到 50 之間，有多少個整數具備這種性質？



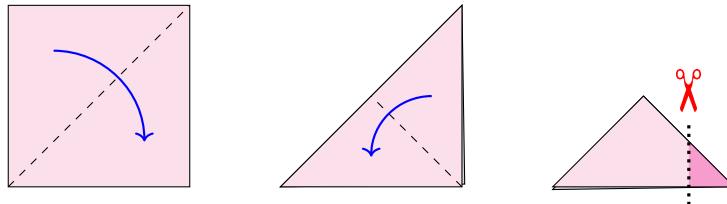
19. I meant to add two numbers together and then subtract a third number. Unfortunately I got my plus and minus symbols the wrong way round. But I was lucky! The answer still came out to be correct. Which statement **must** be true?

我本打算把兩個數字相加後再減去第三個數字，但卻錯誤地將加號和減號的位置放反了。幸運的是，最終結果仍然是正確的。請問下列哪項陳述必然成立？

- (A) The first number equals the sum of the other two.  
第一個數字等於另外兩個數字之和。
  - (B) The third number is the difference between the other two.  
第三個數字等於另外兩個數字之差。
  - (C) The first and second numbers are equal.  
第一個數字與第二個數字相同。
  - (D) The second and third numbers are equal.  
第二個數字和第三個數字相同。
  - (E) The third number is zero.  
第三個數字是 0。

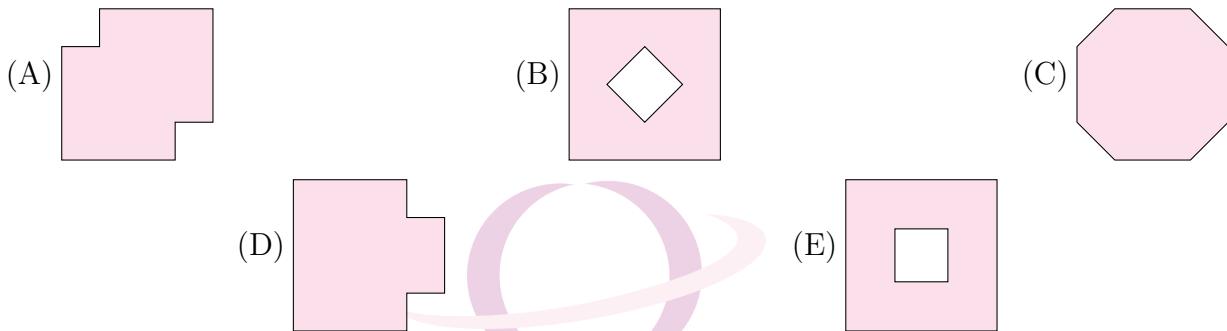
20. A square piece of paper is folded along the dotted lines, as shown in the diagrams. The bottom-right corner is then cut off, as shown by the shading in the third diagram.

如圖所示，先將一張正方形紙沿著虛線進行折疊。接著，按照第三幅圖的操作，剪掉紙張的右下角（即圖中陰影部分）。



When the paper is unfolded, which of the following is the result?

請問下列哪個選項是這張紙重新展開後的樣式？



Questions 21 to 25, 5 marks each

21-25 題，每題 5 分

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21. To prepare a garden bed for growing ginger, Xiao makes a special mix of *ginger soil*. She first mixes 2 buckets of manure with 4 buckets of compost. Then she mixes 1 bucket of this mixture with 3 buckets of sand to make ginger soil. How much compost is in each bucket of ginger soil?

小曉為了培育一塊適合生薑種植的園圃，特意配置出一種 薑土。她先將 2 桶糞肥與 4 桶堆肥混合，然後再從中取 1 桶混合肥與 3 桶沙子混合，製成薑土。請問每桶薑土中含有多少堆肥？

- (A)  $\frac{1}{6}$  of a bucket  $\frac{1}{6}$  桶  
 (B)  $\frac{1}{8}$  of a bucket  $\frac{1}{8}$  桶  
 (C)  $\frac{2}{9}$  of a bucket  $\frac{2}{9}$  桶  
 (D)  $\frac{1}{10}$  of a bucket  $\frac{1}{10}$  桶  
 (E)  $\frac{1}{12}$  of a bucket  $\frac{1}{12}$  桶

22. Troy makes a list of 6 numbers by writing down a starting number then writing the next 5 counting numbers, going up in steps of 1. When he adds them, the total is less than 100. He increases each number by 1, and the new total is greater than 100. What is this new total?

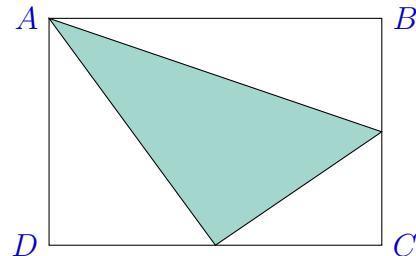
小特寫下了一個包含 6 個數字的數列。他先寫下 1 個起始數字，接著又寫出 5 個數字，其中每個數字都比前一個數字大 1。這個數列的總和原本小於 100，但當他將數列中的每個數字都加上 1 後，新數列的總和超過了 100。請問新數列的總和是多少？



- 23.** The area of this rectangle is 56 square centimetres.

The midpoints of  $BC$  and  $DC$  are joined to  $A$  and to each other, to form the shaded triangle shown. What is the area of this triangle in square centimetres?

圖中矩形面積為  $56\text{ cm}^2$ 。 $BC$  和  $DC$  的中點分別與  $A$  點相連，同時再將這兩個中點相連，構成圖中所示的陰影三角形。請問這個三角形的面積是多少  $\text{cm}^2$ ？






# 學習成就測驗協會

24. A deck of playing cards originally contained 52 cards. Vicki loses some of these. When she deals the cards she has left equally between four people, she has three cards left over. When she deals them equally between six people, she has one card left over. Which of the following could be the number of cards Vicki lost?

一副完整的卡牌最初有 52 張。小維不慎丢失了若干張。如果她將剩下的牌平均分給 4 個人，她還剩下 3 張牌；如果她將剩下的牌平均分給 6 個人，她還剩下 1 張牌。請問小維可能丢失了多少張牌？

25. Kiko and 5 of her friends are seated around a restaurant table. Each person introduces themselves, telling everyone how many of the people at the table they've previously met. Naturally, Kiko has met all 5. Coincidentally, the other 5 have all met the same number as each other. Which of the following is **not** a possibility for this number that all 5 of Kiko's

小可與她的 5 個朋友圍坐在一張桌子上。每個人介紹了自己見過的在場人數。小可見過在場的所有人，而其他 5 人見過的人數恰好都相同。請問下列哪個數字不可能是這 5 人見過的人數？

- (A) 1 (B) 3 (C) 4 (D) 5  
(E) All of (A) to (D) are possible. 以上四個選項都有可能。



For questions 26 to 30, shade the answer as a whole number from 0 to 999  
in the space provided on the answer sheet.

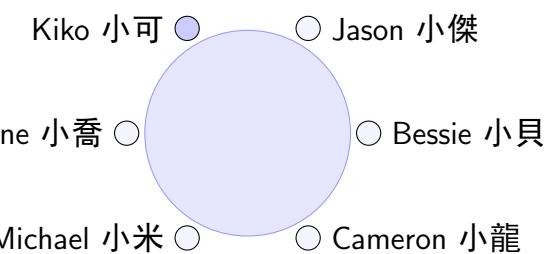
問題 26-30 的答案為 0-999 之間的整數，請將答案填塗在答題卡對應區域。

Questions 26–30 are worth 6, 7, 8, 9 and 10 marks, respectively.

第 26-30 題分別為 6, 7, 8, 9, 10 分。

26. The numbers 1 to 6 are arranged to form two 3-digit numbers that are then added together. What is the difference between the largest and smallest sums that can be obtained?

把數字 1 到 6 排列組合成兩個 3 位數，然後將這兩個數相加。請問可以得到的最大總和與最小總和之差是多少？



27. Jane has four doting grandparents who each separately tell her that they will help her with her savings plans.

小簡有四位寵愛她的祖父母，他們都表示願意支持小簡的儲蓄計劃。

- Granny Ava says, ‘Whatever you have when you come to me, I will add \$10.’  
艾維奶奶說：“無論你來看我時有多少錢，我都會額外給你 10 美元。”
- Granny Beth says, ‘Whatever you have when you come to me, I will double it.’  
貝絲外婆說：“無論你來看我時有多少錢，我都會將它翻倍。”
- Grampa Charles says, ‘Whatever you have when you come to me, I will halve your savings but then add \$50.’  
查理斯爺爺說：“無論你來看我時有多少錢，我會先將它減半，再添上 50 美元。”
- Grampa Dave says, ‘Whatever you have when you come to me, I will double it and add \$5.’  
戴夫外爺說：“無論你來看我時有多少錢，我會將它翻倍並額外給你 5 美元。”

Jane has saved \$10 by herself. She plans to visit each grandparent once, in the order that maximises the amount she has at the end. In dollars, what is this maximum amount?

小簡已經存了 10 美元，她計劃按照可以使得最終金額最大的順序，分別拜訪每位祖父母一次。請問小簡能擁有的最大金額是多少美元？

28. Skip counting by 5, I write a list of 300 numbers that starts 5, 10, 15 and ends 1490, 1495, 1500. How many times do I write the digit ‘0’?

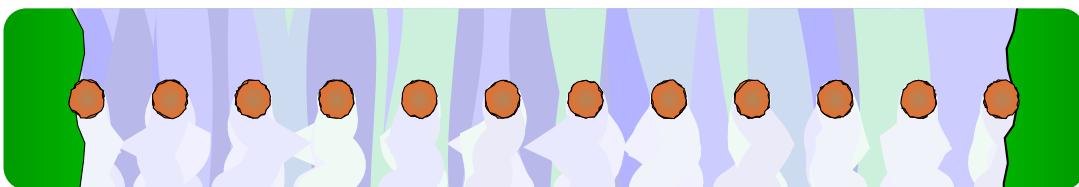
我寫下一個包含 300 個數字的數列。該數列中的第一個數字為 5，此後每一個數字都比前一個數字大 5，得到該數列為 5, 10, 15, … 1490, 1495, 1500。請問在這個數列中，數字 ‘0’ 一共出現了多少次？

29. Starting with the number 2024, a second number is calculated by squaring each digit and adding these squares together:  $2^2 + 0^2 + 2^2 + 4^2 = 24$ . The third number is then calculated by adding the squares of the digits of the second number. This continues until the 2024th number. What is the 2024th number?

第一個數字設定為 2024。隨後通過將第一個數字中的每位數字平方，再相加得到第二個數字： $2^2 + 0^2 + 2^2 + 4^2 = 24$ 。第三個數字是通過將第二個數字中的每位數字平方後相加得到。以此類推，直到得到第 2024 個數字。請問第 2024 個數字是多少？

30. To cross a river, there are 12 stepping stones in a line, equally spaced 50 centimetres apart.

過河時需要將 12 塊墊腳石等距排列為一排，每兩塊墊腳石之間的距離為 50 cm。



I would like to start at the first, and finish at the last, and step on each stepping stone exactly once. I can take both 50 centimetre and 1 metre steps, both forwards and backwards. How many ways are there for me to cross the river?

我想從第一塊墊腳石開始過河，過河期間每塊墊腳石恰好踩一次，到達最後一塊墊腳石即過河成功。我每一步都可以向前或向後邁 50 cm 或 1 m。請問我有多少種不同的過河方式？



澳大利亞數學學會