

2025

# AUSTRALIAN MATHEMATICS COMPETITION

# AMC.

**AMT.**  
AUSTRALIAN  
MATHS TRUST

**Middle  
Primary  
Years 3 – 4**

## Information 考試說明

- There are 30 questions: 25 multiple-choice and 5 integer.  
本次考試共 30 題，包含 25 題單選題和 5 題答案為整數 000~999 的選填題。
- You are allowed 60 minutes to do the questions.  
考試時長為 **60 分鐘**。
- There are no penalties for incorrect answers.  
答錯不扣分。
- The questions have been checked thoroughly. Each question is clearly written and no further explanation will be given.  
本次考試的所有試題已仔細檢查。每題均清楚陳述，不會提供更多解釋。
- Diagrams are not drawn to scale. They are intended only as aids.  
圖形並非按比例繪製，僅供參考。

## Competition rules 考試規則

- Do not open the paper until told to do so.  
收到監考老師指示前，請勿翻開試卷。
- Mobile phones and smart watches are not allowed.  
禁止使用手機和智慧型手錶。
- You may use calculators.  
允許使用簡易型計算機。

No student may sit the competition more than once or sit more than one division of the competition. AMT conducts integrity checks on competition results and reserves the right to withhold results or disqualify students if plagiarism or duplicate sittings are suspected.

### IMPORTANT

All papers must be immediately returned to a supervisor at the end of the competition.  
**This paper is not for circulation or distribution until Monday 29 September 2025.**

DATE

**5 August**

TIME ALLOWED

**60 minutes**

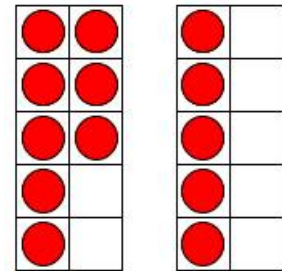
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TURN THE BOOKLET  
OVER AND READ THE  
INSTRUCTIONS ON THE  
BACK COVER.

**Middle Primary Division**  
**Questions 1 to 10, 3 marks each**  
**1-10 題，每題 3 分**

1. How many red counters have been placed on these tens-frames?

請問右側的十格陣中放置了多少個紅色計數圓片？

(A)12 (B)13 (C)14 (D)15 (E)16



2. In the number sentence  $16 - \triangle = 9$ , what is the value of  $\triangle$  ?

在算式  $16 - \triangle = 9$  中，請問  $\triangle$  代表的數字是多少？

(A)3 (B)5 (C)7 (D)9 (E)16

3. I am supposed to be at school at 8:45 am but this clock shows the time when I arrived. This means that I arrived  
 我計畫在早上 8:45 到達學校，但當我到達學校時，鐘錶顯示的時間如右圖所示。這說明我比計畫的時間：

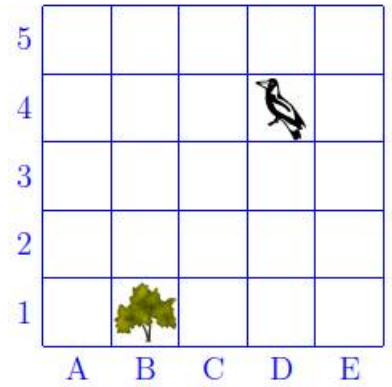
(A)15 minutes early 早到15分鐘  
 (B)15 minutes late 晚到15分鐘  
 (C)45 minutes early 早到45分鐘  
 (D)45 minutes late 晚到45分鐘  
 (E)Half an hour early 早到半小時



4. The bird in square D4 needs to fly back to the tree in square B1. Which one of the following could be the path taken?

位於D4格的小鳥需要飛回B1格的大樹處。請問以下哪一條可能是它的飛行路線？

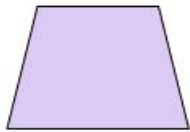
- (A) 2 squares right and 2 squares down  
向右飛2格，再向下飛2格
- (B) 3 squares left and 1 square up  
向左飛3格，再向上飛1格
- (C) 3 squares right and 2 squares up  
向右飛3格，再向上飛2格
- (D) 1 square right and 3 squares down  
向右飛1格，再向下飛3格
- (E) 2 squares left and 3 squares down  
向左飛2格，再向下飛3格



5. Which one of the following is **NOT** a rectangle?  
請問以下哪個圖形不是長方形？



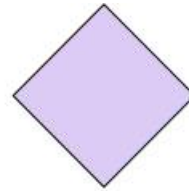
(A)



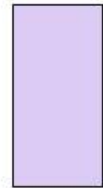
(B)



(C)



(D)

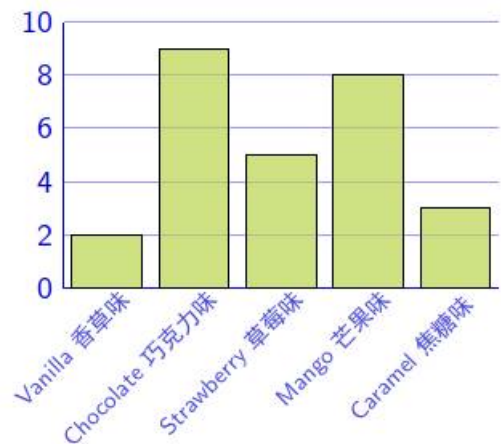


(E)

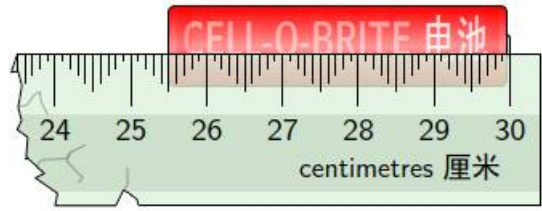
6. A teacher surveyed his students about their favourite ice cream flavours. The survey results are shown in this graph. How many students are in his class?

一位老師統計了學生們最喜歡的霜淇淋口味。統計結果如圖所示。請問這個班級共有多少名學生？

- (A) 5 (B) 9 (C) 15 (D) 21 (E) 27



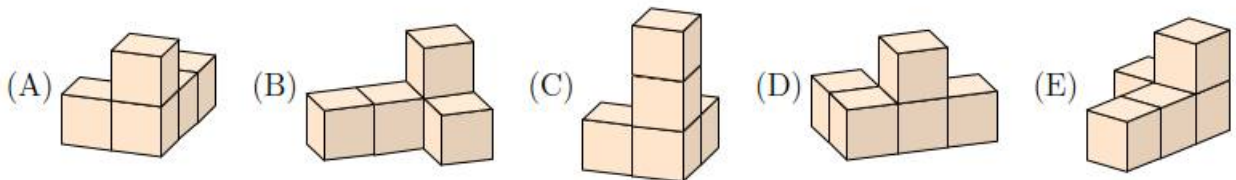
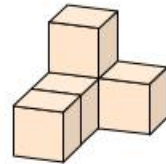
7. Pip's dog chewed her ruler, but she could use what was left to measure this battery. How long is the battery?  
 皮皮的小狗咬壞了她的直尺，但她可以用直尺剩下的部分測量一節電池的長度。請問這節電池的長度是多少？



- (A) 40mm (B) 45mm (C) 50mm (D) 55mm (E) 255mm

8. This year is 2025, which contains only 3 different digits: 0, 2 and 5. In how many years' time will the year next have **all 4** digits different?  
 今年是2025年，這個年份裡只包含3個不同的數字：0、2和5。請問再過多少年，才會出現下一個**所有**4個數字都不相同的年份？  
 (A) 1 year 1年 (B) 5 years 5年 (C) 6 years 6年  
 (D) 9 years 9年 (E) 10 years 10年

9. The solid shown here is made from 5 cubes. Which one of the following five pictures is **not** a possible view of the solid?  
 右側所示的立體圖形由5個立方體組成。請判斷在以下五個視圖中，哪一個不可能是該立體圖形的視圖？



10. I buy a \$4 bag of figs from a roadside stall. I have a \$5 note, a \$2 coin and a \$1 coin. In the money box, there is a \$10 note and two \$2 coins. Which one of the following pays \$4 for the figs?

我在路邊攤買了一包標價為4美元的無花果。我身上有一張5美元紙幣、一枚2美元硬幣和一枚1美元硬幣。收銀臺的錢箱裡有一張10美元紙幣和兩枚2美元硬幣。請問以下哪種方式可以支付4美元的無花果費用？

- (A) Take the \$10 note out and put my \$5 note and \$1 coin in.  
將10美元紙幣從錢箱取出，並放入我的5美元紙幣和1美元硬幣。
- (B) Put both of my coins in the box.  
將我的兩枚硬幣全部放入錢箱。
- (C) Take one \$2 coin out and put my \$5 note in.  
將一枚2美元硬幣從錢箱取出，並放入我的5美元紙幣。
- (D) Put all of my money in the box.  
將我身上所有的錢都放入錢箱。
- (E) Take a \$2 coin out and put my \$5 note and \$1 coin in.  
將一枚2美元硬幣從錢箱取出，並放入我的5美元紙幣和1美元硬幣。

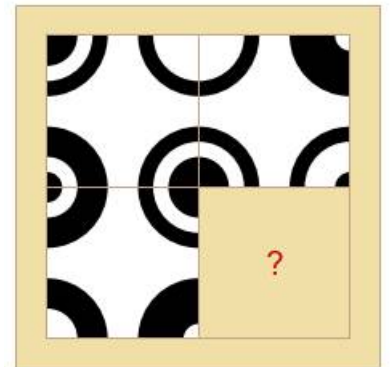
Questions 11 to 20, 4 marks each  
11-20 題，每題 4 分

11. In this puzzle, the tiles have patterns on one side only. These tiles must be placed in the frame so that the patterns in the corners match.

在這個拼圖遊戲中，拼圖塊僅單面印有花紋。這些拼圖塊需要被放置在拼圖相框中，使角落處的花紋能夠相互匹配。

Which one of the following tiles can be used to finish the puzzle?

請問以下哪個選項可以用來完成這個拼圖？



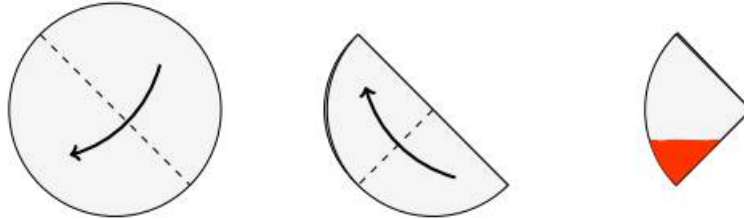
12. Munda has 11 building blocks for his tower. Kaya has 3 times that many, and Bobby has 14 less than Kaya. How many blocks in total do Munda and Bobby have?

在搭塔遊戲中，小蒙使用了11塊積木，小凱使用的積木是小蒙的3倍，而小貝使用的積木比小凱少14塊。請問小蒙和小貝一共使用了多少塊積木？

(A)26 (B)28 (C)30 (D)32 (E)34

13. A circle of paper is folded in half and then in half again as shown. One corner is then dipped in red ink.

如圖所示，將一張圓形紙片對折，然後再進行一次對折。接著，將折好的紙片的一個角浸入紅色墨水中。



What does the circle look like when unfolded and laid flat?

請問將這張圓形紙片展開並平鋪後，它看起來是什麼樣子的？



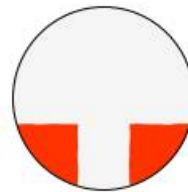
(A)



(B)



(C)



(D)



(E)

14. This arrowhead shape has two equal short sides and two equal long sides. Its perimeter is 20 cm and each short side is 3 cm long.

此箭頭圖形由兩條等長的短邊和兩條等長的長邊組成。已知該圖形的周長為20cm，且每條短邊的長度為3cm。

How long is each long side?

請問每條長邊的長度是多少？

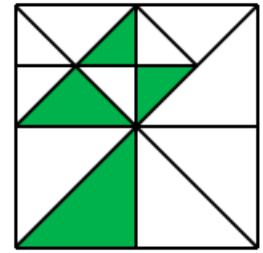
(A)4cm (B)5cm (C)6cm (D)7cm (E)8cm



15. What fraction of this square is shaded?

請問陰影部分面積占整個正方形面積的幾分之幾？

- (A) One-half  $\frac{1}{2}$       (B) One-third  $\frac{1}{3}$       (C) One-quarter  $\frac{1}{4}$   
 (D) One-fifth  $\frac{1}{5}$       (E) One-eighth  $\frac{1}{8}$



16. It's raining and Joanna is one of 7 people trying to get from the house to the bus stop. The group has 3 umbrellas to keep them dry, but each is only big enough for one person.

下雨天，小喬和其他6個人（共7人）需要從家前往公車站。他們一共有3把雨傘，但每把雨傘每次只能供1人使用。

Joanna makes a plan to keep everyone dry where she walks between the house and the bus stop more than once, carrying the extra umbrellas if necessary, and everyone else just walks from the house to the bus stop with one umbrella.

為確保所有人不被淋濕，小喬制定了一個方案：她可以多次往返於家和公車站之間運送雨傘，必要時可攜帶其餘兩把雨傘；而其他則只需要每人持一把雨傘直接前往車站。

What is the smallest number of times that Joanna needs to walk from the house to the bus stop?

請問在該方案下，小喬從家到車站至少需要走多少次？

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

17. In this grid, the 4 symbols represent 4 different numbers. For most rows and columns, the total value is shown.

在右側方格中，4種符號分別代表4個不同的數字。如圖所示，大多數行和列的總和已經標出。

What is the total value of the last row?

請問最後一行的總和是多少？

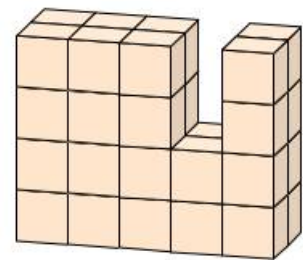
- (A) 10      (B) 12      (C) 14      (D) 16      (E) 18

				14
				21
				14
				?
20	10	16	21	

18. Timmy has a bag with 9 balls in it, numbered 1 to 9. He pulls one ball out at random and looks at the number. Which of the following is the most likely to occur?  
 小蒂的袋子有9顆球，編號從1至9。他從中隨機取出一顆球並查看上面的數字。請問以下哪種情況最有可能發生？
- (A) The number is odd. 該數字為奇數  
 (B) The number is even. 該數字為偶數  
 (C) The number is less than 4. 該數字小於4  
 (D) The number is more than 5. 該數字大於5  
 (E) The number is a multiple of 3. 該數字是3的倍數

19. It takes 6 people 8 hours to harvest 5 truck-loads of mangoes. How long would it take 3 people to harvest 10 truck-loads of mangoes?  
 已知6個人8小時可以收穫5車芒果，請問3個人收穫10車芒果需要多少時間？
- (A) 16 hours 16小時  
 (B) 24 hours 24小時  
 (C) 32 hours 32小時  
 (D) 36 hours 36小時  
 (E) 64 hours 64小時

20. This is a view of a solid made by stacking 36 identical cubes. How many cubes are completely hidden in this view?  
 圖中展示了一個由36個相同立方體堆疊而成的立體圖形。請問在此視角下，有多少個立方體被完全遮擋？
- (A) 6 (B) 7 (C) 8 (D) 9 (E) 10



Questions 21 to 25, 5 marks each  
21-25 題，每題 5 分

21. Four local schools play in a football competition. Each school has one team that plays each of the other schools twice, once at their home ground and once at the other team's home ground. Then the two most successful teams play a grand final to decide the champion. How many matches are played in total?  
四所地方學校參加足球競賽。每所學校派出一支球隊，與其他學校的球隊進行兩場比賽，一場在主場，一場在客場。之後，成績最好的兩支球隊將進行一場總決賽以決出冠軍。請問總共需要進行多少場比賽？  
(A)4 (B)7 (C)8 (D)9 (E)13

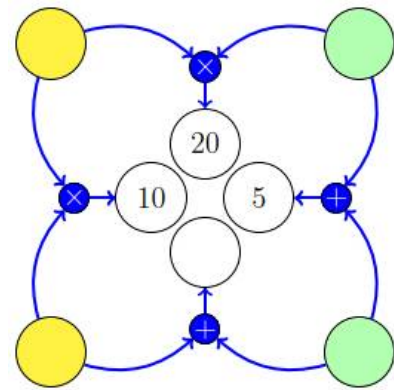
22. When this number puzzle is filled in, the 8 large circles will each contain a whole number greater than 0. The 4 inner numbers will be made from the 4 outer numbers using the arrows and the operations in the small blue circles.

請根據以下規則填寫數字謎題：8個大圓圈內均需填入大於0的整數；4個內部數字則通過箭頭和藍小圓圈內的運算符號，由4個外部數字運算得出。

For example, multiplying the numbers in the yellow circles on the left will give 10, and adding the numbers in the green circles on the right will give 5. How many ways are there to correctly fill in this number puzzle?

例如，左側黃色圓圈內數字相乘結果為10，右側綠色圓圈內數字相加結果為5。請問該數字謎題共有多少種正確的填寫方式？

- (A)0 (B)1 (C)2 (D)3 (E)4

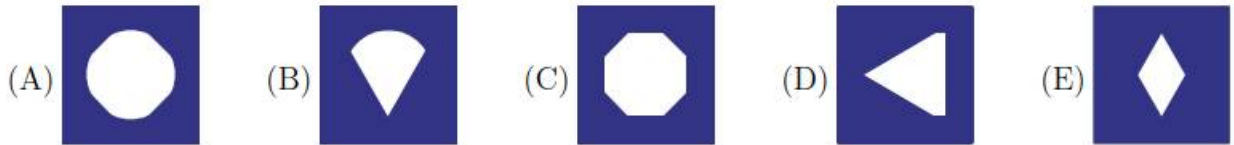


23. Etienne has four square cards, each with a hole of a different shape :  
 小艾有四張正方形卡片，每張卡片上都有一個不同形狀的孔：



Etienne picks two different cards, rotates them randomly and places one on top of the other. This combined shape is also a square with a hole. Which of the following **cannot** be that shape?

他挑選了兩張不同的卡片，將其隨機旋轉後疊放在一起，組合後的圖形仍然是一個帶孔的正方形。請問以下哪個形狀**不可能**是組合後的結果？



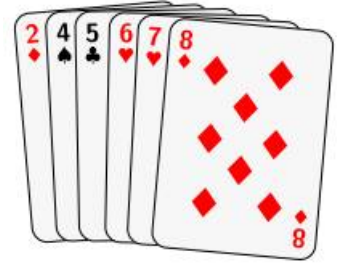
24. A tractor can pull three times as much weight as a horse can. A horse can pull half as much weight as a ute can.  
 一臺拖拉機能拉動的重量是一匹馬的三倍，一匹馬能拉動的重量是一輛小貨車的一半。

Which of the following can pull the most combined weight?

請問以下哪個選項可以拉動最大的總重量？

- (A) 1 horse and 4 utes      1匹馬和4輛小貨車  
 (B) 1 tractor and 1 ute      1臺拖拉機和1輛小貨車  
 (C) 2 horses and 2 utes      2匹馬和2輛小貨車  
 (D) 1 tractor and 4 horses      1臺拖拉機和4匹馬  
 (E) 1 tractor, 1 horse and 1 ute      1臺拖拉機、1匹馬和1輛小貨車

25. Carly has six cards with the numbers 2, 4, 5, 6, 7 and 8 on them. Using these cards, she can make 30 different two-digit numbers. For example, the smallest number she can make is 24 and the largest is 87. How many of these two-digit numbers are multiples of 3?



小莉有六張數字卡片，分別標有數字 2、4、5、6、7、8。

她用這些卡片可以組成 30 個不同的兩位數。例如，最小的兩位數是 24，最大的兩位數是 87。請問在這些兩位數中，有多少個是 3 的倍數？

- (A)7 (B)10 (C)11 (D)12 (E)15

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 reading on the dashboard of Karl's car shows that the car has travelled a total of 57986 km.



He notices that the digits are five numbers in a row – in this case 5, 6, 7, 8, 9 – but in a jumbled order. How many kilometres must Karl travel until the next time there are 5 numbers in a row, but jumbled up?

卡爾的汽車里程表顯示已經行駛了 57986 公里。他注意到這些數字是連續的五個數字(5, 6, 7, 8, 9)，但順序是打亂的。請問卡爾需要再行駛多少公里，才能再次遇到一組被打亂順序的五個連續數字？

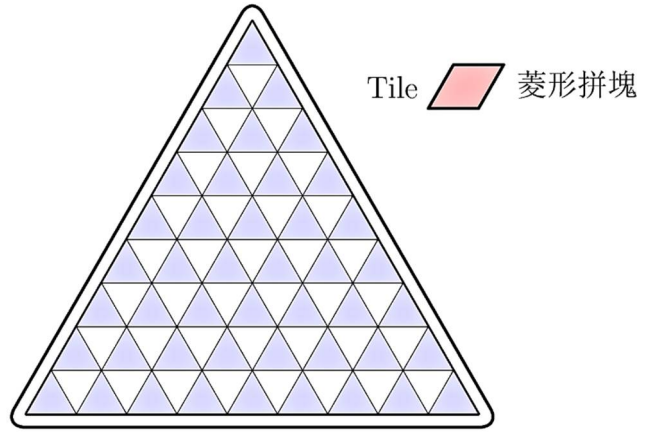
27. Mrs Doublet has two pairs of twins. The first pair are both girls and she named them Alice and Bethan. Less than a decade later she had two boys: Yann and Zachary. This year, she was amazed to find that when she multiplied their four ages, the result was 2025. What is the sum of their ages?

杜太太育有兩對雙胞胎。第一對雙胞胎是女孩，名叫麗麗和貝貝。不到十年後，她又生下了一對雙胞胎男孩，名叫陽陽和章章。今年，杜太太驚訝地發現四個孩子的年齡相乘等於 2025。請問他們的年齡之和是多少？

28. In the game of *Rhombus Blockade* a 1-by-1 rhombus tile must be placed on the triangular board shown so that it covers two grid triangles exactly.

The rhombus may be rotated. In how many different ways can the rhombus be placed?

在遊戲菱形迷陣中，玩家需要將一個  $1 \times 1$  的菱形拼塊放置在圖中的三角形遊戲板上，使其恰好覆蓋兩個網格三角形。已知菱形拼塊可以旋轉，請問該菱形拼塊有多少種不同的放置方法？



29. Dad has baked a tray of 6 cupcakes arranged in 2 rows of 3. Jenny's job is to do the icing for each cake. She has three different styles of icing: pink with hundreds and thousands, green swirl and plain yellow.

爸爸將烤好的 6 個紙杯蛋糕擺放成 2 列 3 行。

珍珍需要為每個蛋糕裝飾糖霜。

她有三種不同款式的糖霜：粉色糖霜配彩色糖粒、綠色漩渦圖案糖霜和純黃色糖霜。

Dad wants them so that no two cakes next to each other in the same row or column have the same style of icing. The diagram shows one possibility. In how many ways can Jenny ice the cakes as Dad wants?

裝飾規則為同一行或同一列中相鄰的蛋糕不能使用相同款式的糖霜。圖示展示了一種可能的裝飾方案。在滿足上述條件的情況下，請問珍珍有多少種裝飾方案？

