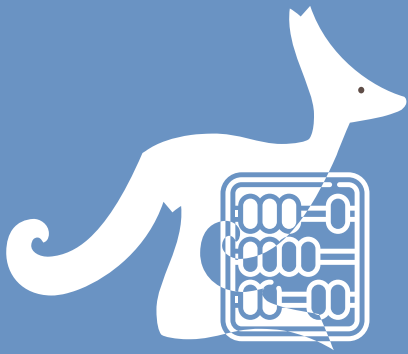




MATH KANGAROO CHINA

考试说明 / Instruction

Time allowed: 75 minutes

考试时长: 75 分钟

Language: English & Chinese

试卷语言: 英文和中文

This is a 24-question multiple-choice competition.

考试包含 24 道单项选择题。

Problems 1 to 8 are worth 3 points each.

1-8 题每题 3 分

Problems 9 to 16 are worth 4 points each.

9-16 题每题 4 分

Problems 17 to 24 are worth 5 points each.

17-24 题每题 5 分

1 point will be deducted for an incorrect answer and

no point for a blank answer.

答错扣 1 分, 不答不扣分。

The full score is 120 (Starting point is 24)

总分为 120 分 (起始分数为 24 分)

Do not open this booklet until you are told to do so.

收到监考老师指令后, 方可打开试卷册。

Mark your answers clearly on the answer sheet using a **2B pencil**.

务必使用 **2B 铅笔**在答题卡上正确填涂自己的答案。

Calculator cannot be used during the competition.

考试期间禁止使用计算器。

DO NOT discuss problems and solutions in any online or public forum until April 30.

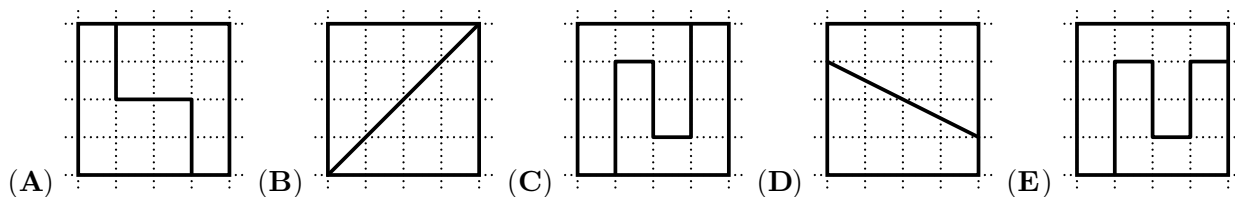
4 月 30 日前请勿以任何形式公开讨论试题和答案。

**Grade 3
&
Grade 4**

3 points

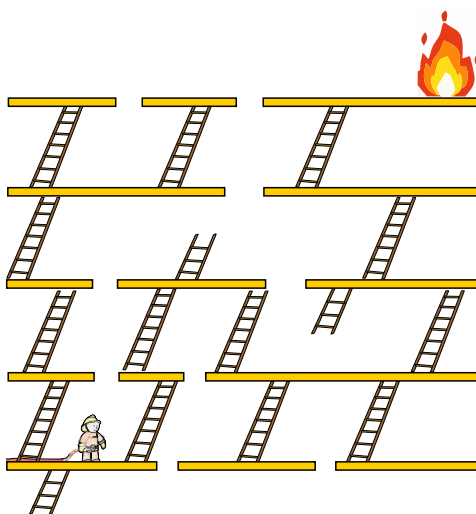
1. Which square is cut into 2 different shapes?

请问哪个正方形被划分为两个不同的形状?



2. What is the smallest number of ladders the firefighter must use to reach the fire without jumping?

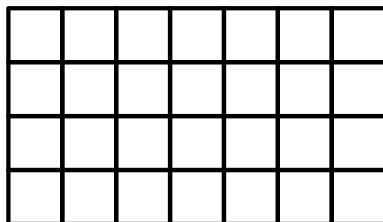
在不跳跃的情况下，消防员最少要用多少把梯子才能去救火?



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

3. The table consists of 28 white cells:

下表由 28 个白色方格组成:



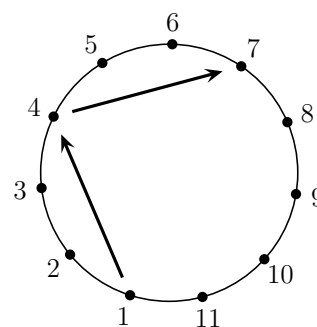
Ira paints 2 rows and 1 column. A row is from left to right. A column is from top to bottom. How many cells will remain white?

小艾为其中 2 行和 1 列方格涂色。行是从左到右，列是从上到下。请问最后还剩多少个白色方格?

- (A) 8 (B) 10 (C) 12 (D) 14 (E) 17

4. Soccer players numbered 1 to 11 stand in a circle. Each player kicks the ball to the third player on their left. Player 1 starts. This kicking pattern continues until a player **has** the ball for the second time. What is the number of the player who **kicked** the ball last?

编号为 1 到 11 的足球运动员站成一个圆圈，每名球员把球踢给自己左边的第三名球员。从 1 号球员开始踢球。这种踢球方式一直持续到出现一名球员第二次**拿到**球为止。请问最后一名**踢球**的是几号球员？



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

5. Mohammad wrote 3 consecutive 4-digit numbers in a row. His sister erased some digits. What are the missing digits (from left to right)?

(For example, 213, 214, 215 are 3 consecutive 3-digit numbers.)

小莫将 3 个连续的四位数写成一行，他的姐姐擦掉了其中一些数位上的数字。请问哪些数字被擦掉了？（从左到右排列）

（例如，213, 214, 215 是 3 个连续的三位数。）

___7, ___898, 48___

- (A) 389, 3, 99 (B) 489, 3, 96 (C) 489, 4, 98 (D) 489, 4, 99 (E) 488, 4, 99

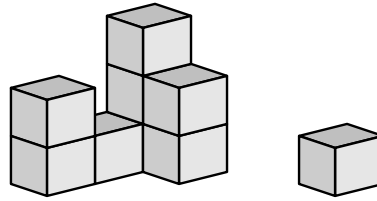
6. Lizzy pays 7 dollars for 3 items. The cost of each item is different and is a whole number. How much is the most expensive item?

小李花 7 美元买了 3 件物品。每件物品价格不同，但都是整数。请问其中最贵的物品价格是多少？

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

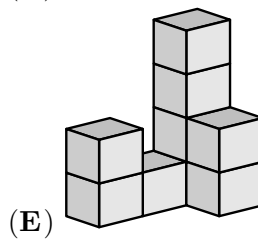
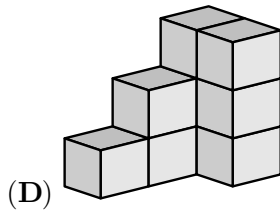
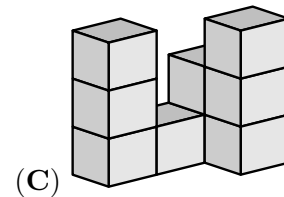
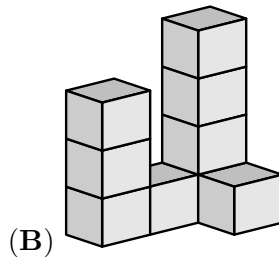
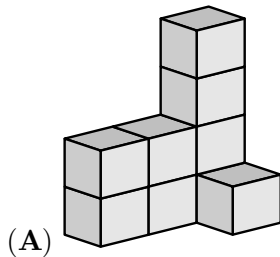
7. A cat knocks off 1 block from Felix's construction.

小菲用积木搭建出一个形状，一只小猫撞掉了其中一块积木。



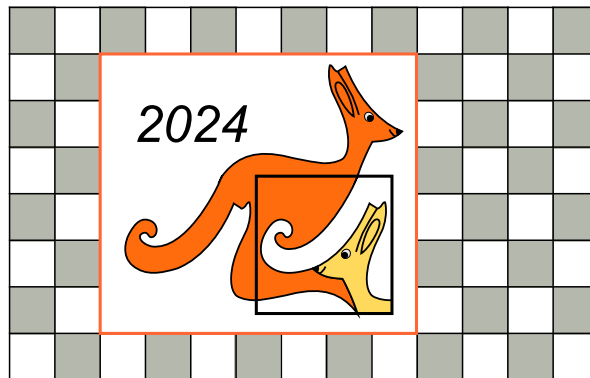
What could this construction have looked like **before** the block was knocked off?

请问在这块积木被撞掉前，小菲搭建的可能是什么形状？



8. Alex has a Kangaroo poster on the kitchen wall.

小亚在厨房的墙上贴了一张袋鼠海报。



How many grey tiles are there behind the poster?

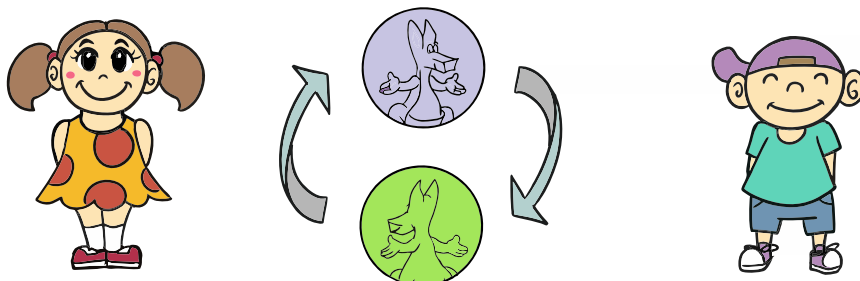
请问海报后面有多少块灰色瓷砖？

- (A) 15 (B) 21 (C) 25 (D) 30 (E) 35

4 points

9. Antonia and Lucian toss a coin.

小安和小卢在掷硬币。



1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	----	----	----

If the child sees the purple side, the child advances 3 steps. If the child sees the green side, the child goes back 1 step or stays at the starting position. Both started in front of number 1 and each tossed the coin 4 times. Antonia advanced to number 4 and Lucian advanced to number 8. How many times in total did they see the green side of the coin?

如果掷出硬币紫色的一面，就前进 3 格；如果掷出硬币绿色的一面，就后退 1 格，或停留在起点。两人都从第 1 格前面开始，每人掷 4 次硬币。小安前进到第 4 格，小卢前进到第 8 格。请问他们一共有几次掷出硬币绿色的一面？

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

10. There are five different kinds of fruit in a bowl: . Ann likes . Ben likes . Cam likes . Dan likes . Eli likes .

Everyone gets a fruit they like. Everyone gets a different kind of fruit. What does Ben get?

一个碗里有五种不同的水果： 。小安喜欢 ；小本喜欢 ；小卡喜欢 ；小丹喜欢 ；小伊喜欢 .

每个人都得到了一个自己喜欢的水果，而且每个人得到的水果都不同。请问小本得到了什么水果？

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

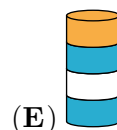
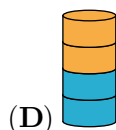
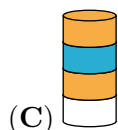
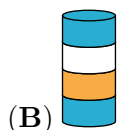
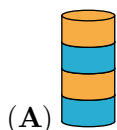
11. Ada has built a tower of 8 discs, as in the picture.

Ada removes the second disc from the bottom of this tower. Then she removes the third disc from the bottom of the new tower. Then she removes the fourth disc from the bottom of the new tower. Then she removes the fifth disc from the bottom of the new tower. Which tower does Ada end up with?

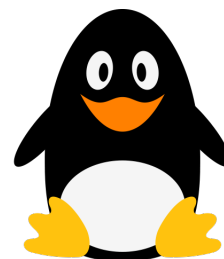


如图所示，小艾用 8 个圆盘建了一座塔。

小艾先拿走了从塔底往上数的第二个圆盘，然后又拿走了从新塔底部往上数的第三个圆盘，紧接着又拿走了从新塔底部往上数的第四个圆盘，最后拿走了从新塔底部往上数的第五个圆盘。请问下列哪项是小艾最终得到的塔？



12. Peter the penguin goes fishing every day and brings back 9 fish for his 2 chicks. Each day, he gives 5 fish to the first chick he sees and 4 fish to the second chick, which they eat. Over the last few days, 1 chick has eaten 26 fish. How many fish has the other chick eaten?



企鹅小皮每天都去钓鱼，并为他的 2 只小企鹅带回 9 条鱼。每天，他给自己看到的第一只小企鹅喂 5 条鱼，给第二只喂 4 条鱼。在过去的几天里，有 1 只小企鹅吃了 26 条鱼。请问另一只小企鹅吃了多少条鱼？

(A) 19

(B) 22

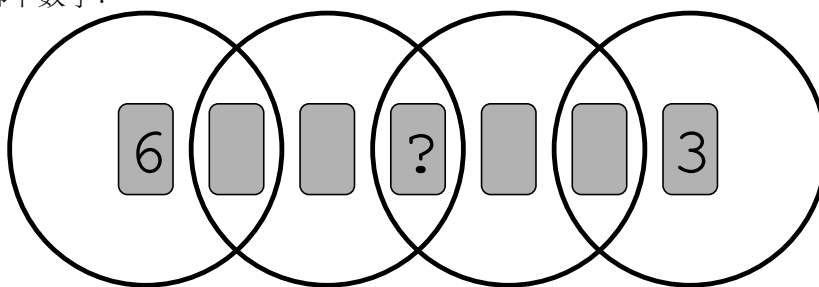
(C) 25

(D) 28

(E) 31

13. 7 cards, numbered 1 to 7, are placed in 4 overlapping rings. The sum of the numbers in each ring is 10. Which number is under the question mark?

将 7 张分别写有数字 1 - 7 的卡片放在 4 个依次相交的圆环中。每个圆环中数字的总和是 10。请问问号下面是哪个数字？



(A) 1

(B) 2

(C) 4

(D) 5

(E) 7

14. Lucas wants to make a caterpillar that has a head, a tail and either 1, 2 or 3 puzzle pieces in between. How many different caterpillars can Lucas make without flipping pieces?

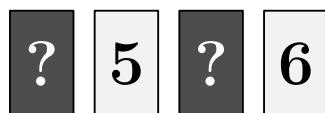
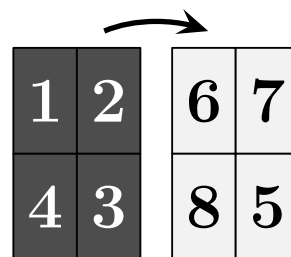
小卢想拼接一条有头有尾的毛毛虫，头尾中间可能会有 1、2 或 3 片拼图。请问在不翻转拼图的情况下，小卢可以拼接几条不同的毛毛虫？



- (A) 3 (B) 4 (C) 5 (D) 6 (E) 7

15. John writes the numbers 1 to 4 on a sheet. Then he flips the sheet and writes the numbers 5 to 8, as shown. After that, he cuts the sheet into 4 rectangular cards and puts them in a row:

小吉在一张纸上写下数字 1 到 4，然后他把这张纸翻过来，并写下数字 5 到 8，如右图所示。紧接着，他把纸剪成 4 张长方形卡片，并摆成一行：



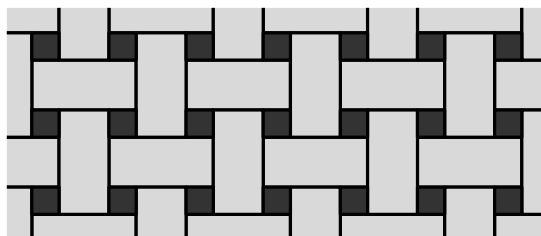
What is the sum of the numbers represented by the question marks?

请问图中问号所代表的数字之和是多少？

- (A) 3 (B) 4 (C) 5 (D) 6 (E) 7

16. A floor is covered with 2 kinds of tile and . The rectangles have size $23 \text{ cm} \times 11 \text{ cm}$. The picture shows a part of the floor. What is the side-length of the square tiles?

地板上铺有 和 两种瓷砖，其中长方形瓷砖的尺寸是 $23 \text{ cm} \times 11 \text{ cm}$ 。下图是地板的一部分。请问正方形瓷砖的边长是多少？



- (A) 3 cm (B) 4 cm (C) 5 cm (D) 6 cm (E) 7 cm

5 points

17. A student has 3 cards with numbers on them. Their sum is 782. Unfortunately, a worm ate part of each card. What is the sum of the 3 missing digits?

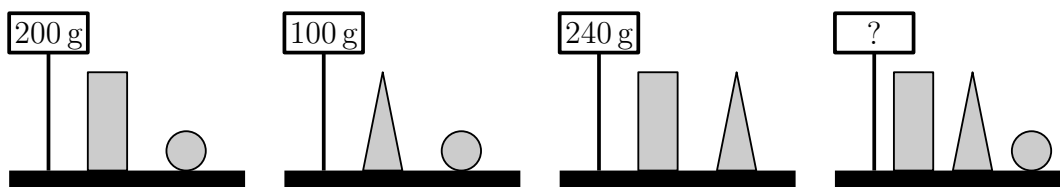
一名学生有 3 张写有数字的卡片，卡片上的数字之和是 782。不幸的是，每张卡片都被虫子吃掉了一部分。请问被吃掉的 3 个数字之和是多少？



- (A) 8 (B) 9 (C) 10 (D) 11 (E) 12

18. Lucy weighs some blocks.

小露给一些积木称重。



How much do the 3 different blocks weigh together?

请问这 3 种不同的积木一共有多重？

- (A) 270 g (B) 280 g (C) 290 g (D) 300 g (E) 310 g

19. There are 60 pupils on a trip. When they line up, the colours of their reflective vests follow the pattern: yellow, green, yellow, green...The colours of their backpacks follow a different pattern: red, brown, orange, red, brown, orange...How many pupils with a yellow reflective vest also have an orange backpack?

有 60 名小学生去旅行。排队时，他们穿的反光背心颜色遵循这样的规律：黄色、绿色、黄色、绿色..... 他们背的书包颜色遵循另一种规律：红色、棕色、橙色、红色、棕色、橙色..... 请问有多少名小学生穿着黄色反光背心并且背着橙色书包？

- (A) 3 (B) 4 (C) 6 (D) 8 (E) 10

20. In the following calculations, the same digits are hidden under the same figures. Different digits are hidden under different figures.

在下面的算式中，相同图形代表相同的一位数，不同图形代表不同的一位数。

$$\triangle + \triangle = \square \bigcirc$$

$$\bigcirc + \triangle = \square \square$$

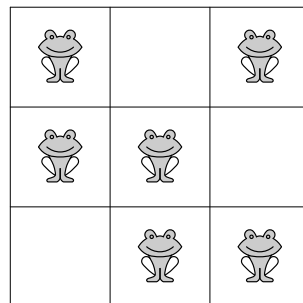
What is the value of $\triangle \times \bigcirc \times \square$?

请问 $\triangle \times \bigcirc \times \square$ 的值是多少？

- (A) 0 (B) 15 (C) 18 (D) 28 (E) 30

21. There are exactly 2 frogs in each row and each column. The frogs decide that 2 of them will jump to a neighbouring empty cell at the same time. Neighbouring cells have a side in common. After that, there still are exactly 2 frogs in each row and in each column. In how many ways can the frogs do this?

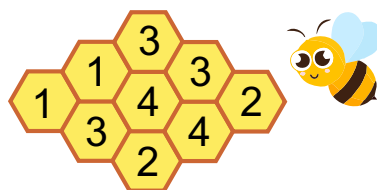
下方每行每列都恰好有两只青蛙。青蛙们决定，它们中的两只将同时跳到一个与自己相邻的空白方格中。相邻方格是指共用一条边的方格。完成跳跃后，每行和每列中依然恰好有两只青蛙。请问这些青蛙有几种跳跃方式？



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

22. The figure below shows a beehive with 9 cells. There is honey in some cells. The number in each cell shows how many neighbouring cells contain honey. Neighbouring cells have a side in common. How many cells contain honey?

下图是一个由 9 个巢穴组成的蜂巢。其中一些巢穴中含有蜂蜜，每个巢穴上的数字表示相邻巢穴中含有蜂蜜的巢穴数量。相邻巢穴是指共用一条边的巢穴。请问这个蜂巢中有多少个巢穴含有蜂蜜？



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

23. 3 girls go to the tray one after the other and take some cookies.

3 个女孩相继走到托盘前拿走一些饼干。



One of the girls takes all the hearts available on the tray. Another girl takes all the white cookies available on the tray. Another girl takes all the large cookies available on the tray. However, they do not necessarily take the cookies in this order.

One girl takes 3 cookies, one takes 6 cookies and one takes 7 cookies.

Which of the following sets of cookies does one of these girls take?

其中一个女孩拿走了托盘上所有的心形饼干；另一个女孩拿走了托盘上所有的白色饼干；还有一个女孩拿走了托盘上所有的大块饼干。但是，她们不一定是按照这个顺序拿走的饼干。

其中有一个女孩拿走 3 块饼干；一个女孩拿走 6 块饼干；还有一个女孩拿走 7 块饼干。

请问以下哪组饼干是其中一个女孩拿走的？

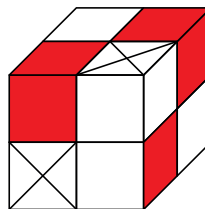


24. There are 2 types of blocks: white and red .

A small cube can be made of 4 white blocks or of 1 white and 1 red block. The large cube shown in the picture is made of small cubes. What is the smallest number of white blocks needed to make the large cube?

有两种积木：白色积木 和红色积木 。

一个小立方体可以用 4 块白色积木搭成，也可以用 1 块白色积木和 1 块红色积木搭成。下图所示的大立方体是用小立方体搭成的。请问最少需要几块白色积木才能搭成这个大立方体？



(A) 8

(B) 11

(C) 13

(D) 14

(E) 23