

## CHINESE VERSION

NAME \_\_\_\_\_

**TIME ALLOWED: 60 MINUTES**

### INSTRUCTIONS AND INFORMATION

#### General

1. Do not open the booklet until told to do so by your teacher.
2. You may use any teaching aids normally available in your classroom, such as MAB blocks, counters, currency, calculators, play money etc. You are allowed to work on scrap paper and teachers may explain the meaning of words in the paper. Mobile phones are not permitted.
3. Diagrams are NOT drawn to scale. They are intended only as aids.
4. There are 25 multiple-choice questions, each requiring a single answer, and 5 questions that require a whole number answer between 0 and 999. The questions generally get harder as you work through the paper. There is no penalty for an incorrect response.
5. This is a competition not a test; do not expect to answer all questions. You are only competing against your own year in your own country/Australian state so different years doing the same paper are not compared.
6. Read the instructions on the answer sheet carefully. Ensure your name, school name and school year are entered. It is your responsibility to correctly code your answer sheet.
7. When your teacher gives the signal, begin working on the problems.

#### The answer sheet

1. Use only lead pencil.
2. Record your answers on the reverse of the answer sheet (not on the question paper) by FULLY colouring the circle matching your answer.
3. Your answer sheet will be scanned. The optical scanner will attempt to read all markings even if they are in the wrong places, so please be careful not to doodle or write anything extra on the answer sheet. If you want to change an answer or remove any marks, use a plastic eraser and be sure to remove all marks and smudges.

#### Integrity of the competition

The AMT reserves the right to re-examine students before deciding whether to grant official status to their score.

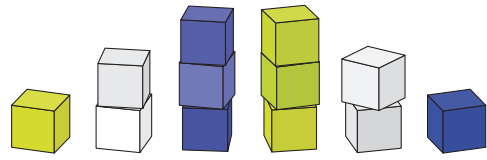
**Reminder: You may sit this competition once, in one division only, or risk no score.**



1-10 题, 每题 3 分  
Questions 1 to 10, 3 marks each

1. 请问右图中总共有多少个正立方体?

How many cubes are shown here?



- (A) 6            (B) 9            (C) 10            (D) 12            (E) 18
- 

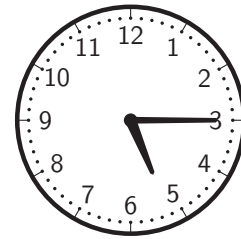
2.  $20 + 20 =$

- (A) 40            (B) 30            (C) 200            (D) 220            (E) 2020
- 

3. 请问右图中时钟所显示的时刻是多少?

What time is shown on this clock?

- (A) 3:05            (B) 3:50            (C) 5:03  
(D) 5:15            (E) 5:30



4. 请问 16 的一半是多少?

Half of 16 is

- (A) 32            (B) 4            (C) 9            (D) 7            (E) 8
- 

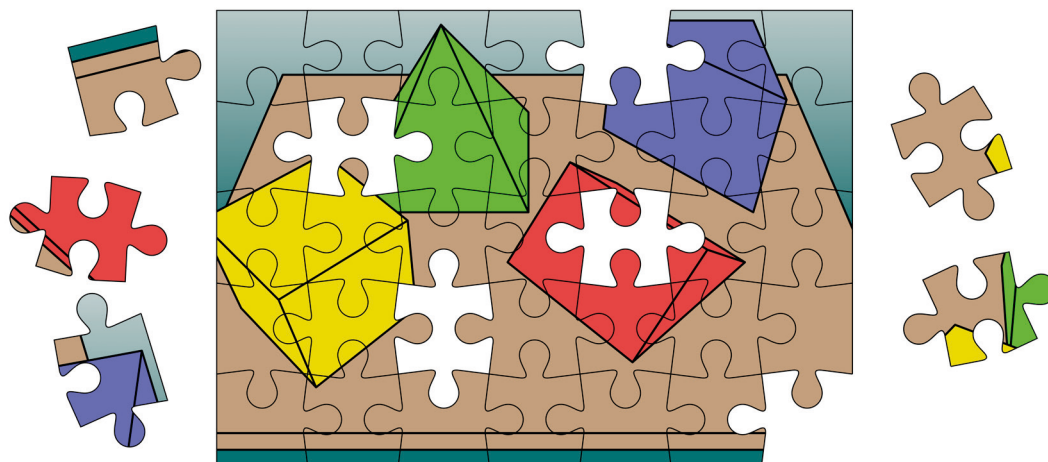
5. 今天是星期四, 请问后天是星期几?

- (A) 星期四    (B) 星期五    (C) 星期六    (D) 星期日    (E) 昨天

Today is Thursday. What is the day after tomorrow?

- (A) Thursday    (B) Friday    (C) Saturday    (D) Sunday    (E) yesterday
-

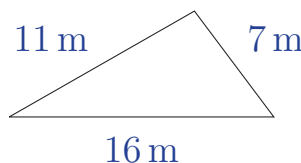
6. 截至目前为止，请问总共有几片拼图已经被排进图内？



How many pieces have been placed in the jigsaw puzzle so far?

- (A) 25            (B) 27            (C) 30            (D) 33            (E) 35

7. 请问右图中三角形的周长是多少？

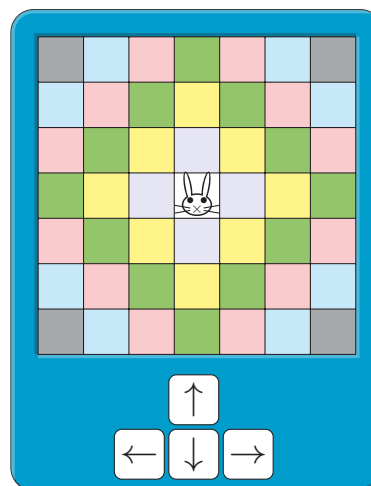


What is the perimeter of this triangle?

- (A) 33 m            (B) 34 m            (C) 35 m            (D) 36 m            (E) 37 m

8. 右图是一个电动玩具，在小方格内有一只兔子。下方的箭头按键可将兔子朝箭头所指的方向移动一个小方格。

从方格表的中央出发，请问下列哪一项中的系列操作会使这只兔子回到原来出发的位置？



Tia is playing a computer game with a rabbit on a grid. Each arrow key moves the rabbit one square in the direction on the key.

Starting in the centre of the grid, which sequence of moves takes Tia's rabbit back to this starting position?

- (A)  $\uparrow \uparrow \rightarrow \rightarrow \uparrow \uparrow \rightarrow \rightarrow$             (B)  $\uparrow \uparrow \leftarrow \rightarrow \rightarrow \leftarrow \downarrow \downarrow$   
 (C)  $\uparrow \uparrow \uparrow \leftarrow \leftarrow \leftarrow \downarrow \rightarrow$             (D)  $\uparrow \leftarrow \downarrow \downarrow \downarrow \downarrow \rightarrow \uparrow$   
 (E)  $\rightarrow \rightarrow \rightarrow \uparrow \leftarrow \leftarrow \leftarrow \uparrow$

9. 我的口袋内有 10 枚硬币，一半数量的硬币币值为 20 美分，另一半数量的硬币币值为 50 美分。请问这些硬币的总金额是多少？（1美元=100美分）

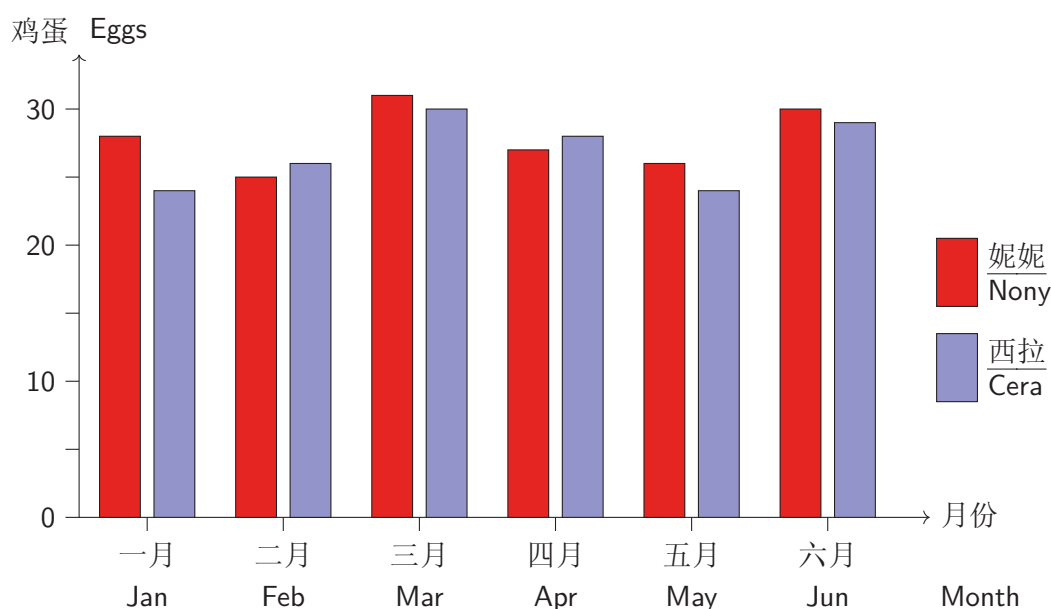
(A) 1.50 美元 (B) 2 美元 (C) 2.50 美元 (D) 3 美元 (E) 3.50 美元

I have 10 coins in my pocket, half are 20c coins and half are 50c coins.

The total value of the coins is

(A) \$1.50 (B) \$2 (C) \$2.50 (D) \$3 (E) \$3.50

10. 后院饲养有两只鸡，妮妮和西拉。下图显示它们在今年的前六个月所生出的鸡蛋数量。



请问有几个月妮妮生的蛋比西拉多？

The graph shows the number of eggs laid by backyard chickens Nony and Cera for the first six months of the year.

In how many months did Nony lay more eggs than Cera?

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

**11-20 题，每题 4 分**  
**Questions 11 to 20, 4 marks each**

11. 小奇有 9.50 元，他花费 1.75 元买水果当作午餐，同时他给两位朋友各 1.30 元。请问最后他还剩下多少钱？

(A) 3.35 元    (B) 4.35 元    (C) 5.15 元    (D) 7.75 元    (E) 8.20

Micky had \$9.50. He spent \$1.75 on fruit for lunch and gave his two friends \$1.30 each. How much money did he have left?

(A) \$3.35    (B) \$4.35    (C) \$5.15    (D) \$7.75    (E) \$8.20

12. 在弹珠游戏结束时，小李有 15 颗弹珠、小杜有 8 颗弹珠、小欧有 4 颗弹珠。小李应该一共还给他的朋友们多少颗弹珠，才能让下一局开始时大家的弹珠数量都相同？

At the end of a game of marbles, Lei has 15 marbles, Dora has 8 and Omar has 4. How many marbles must Lei give back to his friends if they want to start the next game with an equal number each?

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

13. 1澳元硬币的厚度为 3 mm。  
小凯将这样一堆硬币堆叠成高度为 60 mm 的一摞。  
请问这摞硬币共值多少钱？



Australian \$1 coins are 3 mm thick.

Chris makes a stack of these coins 60 mm high.

What is the stack worth?

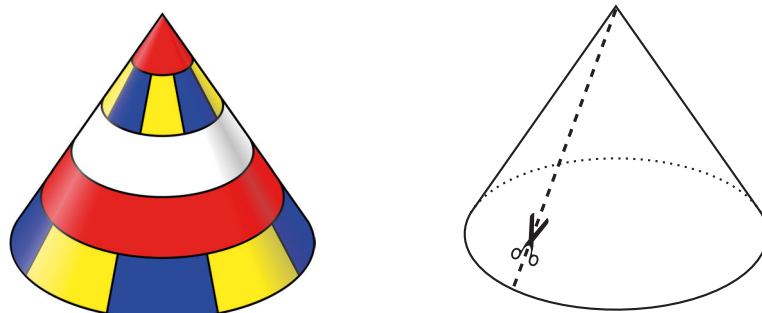
(A) \$3    (B) \$20    (C) \$36    (D) \$40    (E) \$60

14. A、B、C、D、E 五人参加游泳比赛。B 既不是冠军也不是最后一名。D 赢了两个人但不是第一名。A 落后于 D 而 C 赢了 E。请问谁是冠军？  
(A) A    (B) B    (C) C    (D) D    (E) E

Ada, Billy, Con, Dee and Edie took part in a swimming race. Billy did not win or come last. Dee finished ahead of two others but did not come first. Ada finished after Dee and Con finished before Edie. Who won the race?

(A) Ada    (B) Billy    (C) Con    (D) Dee    (E) Edie

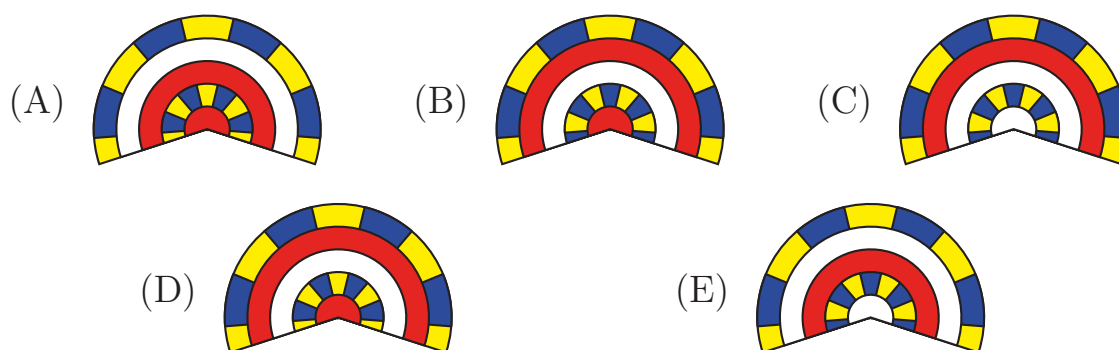
15. 在小力的生日宴会上，他与他的朋友们都戴着由彩带做成圆锥状的帽子，如下左图所示。宴会结束后，小力将其中一顶帽子沿着一直线向上剪开至顶点，如下右图所示。



当小力把剪开的帽子展开贴平在桌面上时，请问下列哪一项与这顶帽子的外观符合？

At his birthday party, Ricky and his friends wear stripy paper hats in the shape of a cone, as shown on the left. After the party, Ricky makes a straight cut in one of the hats all the way up to the point at the top, as shown on the right.

Which of the following best matches what the hat will look like when Ricky flattens it out on the table?

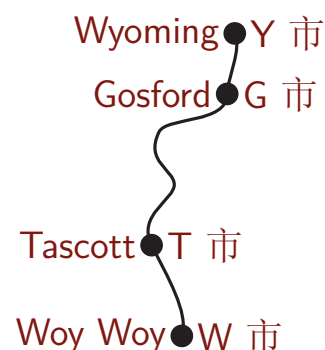


16. 从 W 市到 G 市的公路长 12 km，如右图所示。  
 约翰住在 T 市，位于 W 市北面，距离 4 km。  
 马莉住在 Y 市，位于 G 市北面，距离 2 km。  
 约翰打算开车到马莉家，请问他需要行驶多远？

It is 12 km by road from Woy Woy to Gosford, as shown on this map.

John lives in Tascott, 4 km north of Woy Woy. Marike lives in Wyoming, 2 km north of Gosford.

How far does John have to drive to visit Marike?

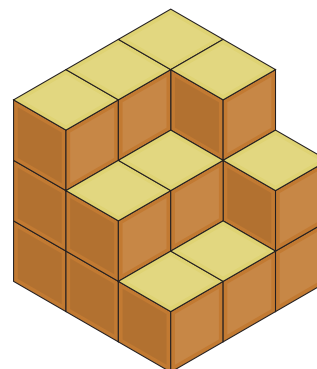


- (A) 10 km      (B) 18 km      (C) 16 km      (D) 6 km      (E) 20 km

17. 小杰打算用一些单位正立方体建造一个  $3 \times 3 \times 3$  的正立方体。右图为他目前的半成品。  
 请问他还需要多少个单位正立方体才能完成这个  $3 \times 3 \times 3$  的正立方体？

Jake is building a  $3 \times 3 \times 3$  cube using small wooden cubes. The diagram shows where he is up to.

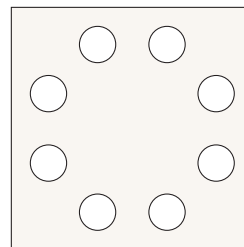
How many more small cubes does he need to complete his  $3 \times 3 \times 3$  cube?



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



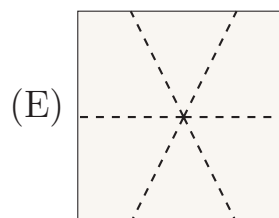
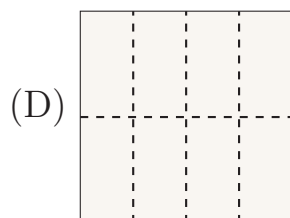
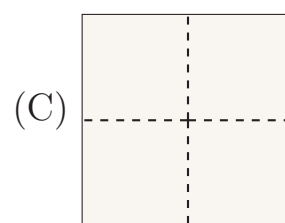
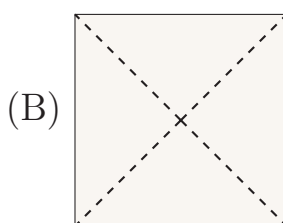
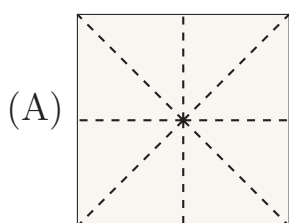
18. 小娟将一张正方形纸张对折了几次，  
然后打了一个洞同时穿透纸张的每一层。  
将折纸全部展开后如右图所示。  
请问下列哪一项是纸张上呈现的折痕形状？



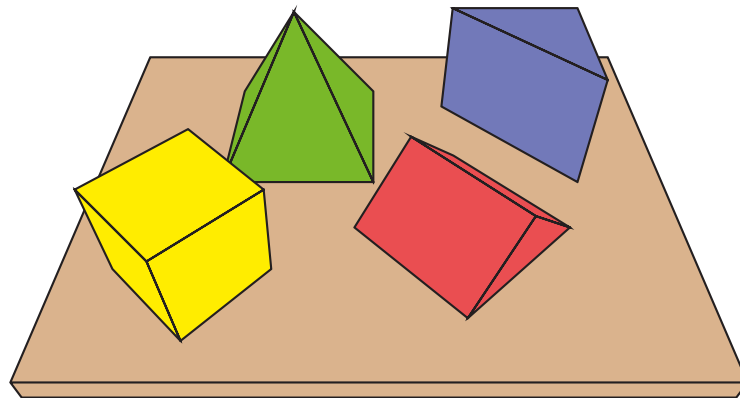
Juanita started with a square of paper, made some folds in it, then punched a single hole through all layers.

The diagram shows what it looked like after she unfolded it and flattened it back out.

What was the pattern of folds she made?



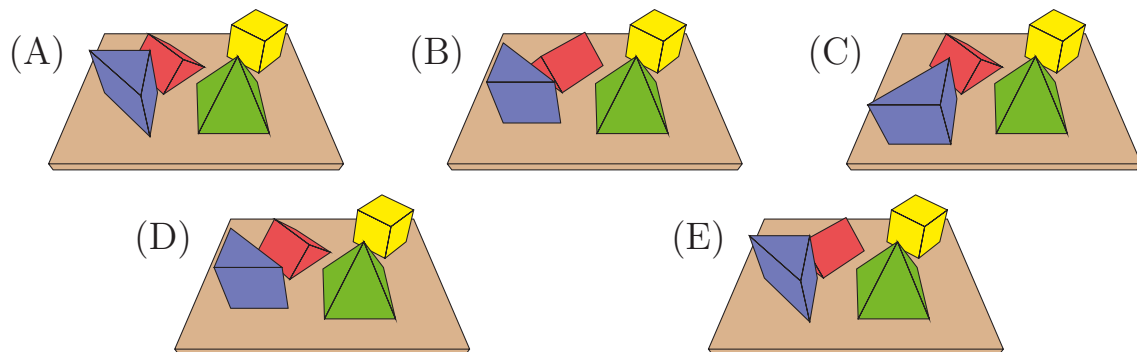
19. 阿丹在学校的书桌上放了各种形状的立体模型。下图是从他所在一侧书桌看过去的样子：



小南面对阿丹坐在桌子的对面。请问下列哪一项图形可表示从小南这一侧桌子看过去的样子？

Aidan puts a range of 3D shapes on his desk at school. The diagram shows the view from his side of the desk.

Nadia is sitting on the opposite side of the desk facing Aidan. Which of the following diagrams best represents the view from Nadia's side of the desk?



20. 我有五枚 50 美分硬币、五枚 1 美元硬币与五枚 2 美元硬币。请问有多少种不同的方法可以凑成 5 美元？（1美元=100美分）

I have five 50c coins, five \$1 coins and five \$2 coins. In how many different ways can I make up \$5?

- (A) 4                      (B) 6                      (C) 8                      (D) 10                      (E) 12

**21-25 题, 每题 5 分**  
**Questions 21 to 25, 5 marks each**

- 21.** 当跑完学校越野赛跑的第一公里后, 小佩是倒数第二名。  
跑完第二公里后, 她超越了七个人。  
跑完第三公里后, 有两个人超越了她。跑完第四公里, 也就是最后一公里后, 她超越了八个人, 但又有另外四个人超越了她。  
最后, 她获得了第九名。  
请问共有多少人参加这项比赛?

After the first kilometre of the school cross-country run, Petra was second last.

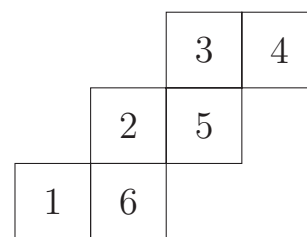
In the next kilometre she managed to overtake seven runners.

In the third kilometre, two runners overtook her. In the final kilometre, she passed eight runners, but four other runners overtook her. She finished ninth.

How many were in the race?

- (A) 15            (B) 18            (C) 19            (D) 20            (E) 21

- 22.** 我将右侧这个展开图折成一个正立方体。  
接着我将这个正立方体相对面的两个数相乘得到三个乘积。  
请问其中最大的乘积是多少?



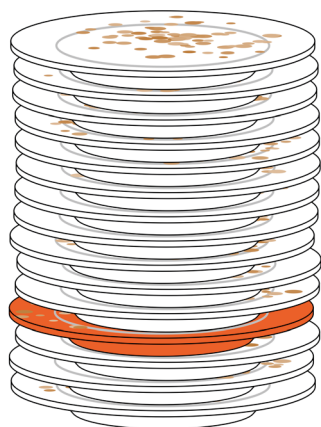
I fold up this net to make a cube.

I then multiply the numbers on opposite faces to get three numbers.

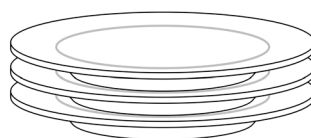
The largest of these is

- (A) 12            (B) 15            (C) 18            (D) 24            (E) 30

23. 殷先生在一家忙碌的餐厅担任洗碗工。每一个脏盘子从左侧经过清洗、擦干，然后放到右侧这堆干净盘子上，共需费时1分钟。7分钟之后，服务生会拿来4个脏盘子放到左侧，之后的每7分钟都是如此。



15 个脏盘子  
15 dirty plates



3 个干净盘子  
3 clean plates

当左侧涂色的这个盘子正在被清洗时，请问右侧这堆共有几个已经洗干净的盘子？

Emanuel works in a busy restaurant washing dishes. Each dirty plate from the stack on the left takes 1 minute to wash and dry, before being placed on top of the clean stack on the right. After 7 minutes, and every 7 minutes from then on, a waiter brings 4 more dirty plates and adds them to the top of the dirty stack.

How high is the stack of clean plates when the coloured plate is being washed?

- (A) 14            (B) 16            (C) 18            (D) 20            (E) 22

24. 某校共有 400 位学生，他们每人可投一票选举学生会会长。现共有 A、B、C 三位候选人，A 得到的票数是 C 的三倍、B 比 A 少得 20 票。请问 B 总共得到多少票？

A primary school has 400 students and they each have one vote for a school captain. They voted for Jordan, Evie and Emily. Jordan got 3 times as many votes as Emily. Evie got 20 fewer votes than Jordan. How many votes did Evie get?

- (A) 20            (B) 60            (C) 100            (D) 140            (E) 160
- 

25. 小克在步道上行走，希望避免踩到两块地砖间的缝隙，因此他在每两块砖上都走等距离的三步。步道上每三块地砖中都有一块是深色的，如图所示。



在前100 步中，请问小克有多少个左脚脚印踏在深色地砖上？

Karl likes to avoid walking on the cracks in the footpath by taking three equally spaced steps for every two blocks. Every third block of the footpath is darker than the others, as shown.

In his first 100 steps, how many times does Karl's left foot step on a darker block?

- (A) 11            (B) 16            (C) 21            (D) 25            (E) 33
-

问题 26-30 的答案为 000-999 之间的整数，  
请将答案填在答案卡上对应的位置。

第 26 题占 6 分，第 27 题占 7 分，第 28 题占 8 分，  
第 29 题占 9 分，第 30 题占 10 分。

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

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

26. 小贞心里想了三个数。

这三个数由 1、3、5、6、7、8 和 9 几个数字组成，且每个数字  
刚好只能使用一次。已知第二个数是第一个数的 2 倍，第三  
个数是第一个数的 4 倍。请问第三个数是多少？

Janine thinks of three numbers.

Between them, they use the digits 1, 3, 5, 6, 7, 8 and 9, with each  
digit being used exactly once.

The second number is 2 times the first number.

The third number is 4 times the first number.

What is the third number?

27. 在右图中，你在标示“入口”处进入方格表  
且在标示“出口”处离开方格表。你只可  
以在白色小方格间上下左右移动，但绝对不  
可以进入涂色的方格内。每个小方格最多只  
能经过一次。  
利用这样的移动方式并将所经过小方格内  
的数加起来求和。请问可以得到的和的最大  
值是多少？

60	50		50	55
50	45	150		
			50	50
55	55	60	25	55
		30		
70				

出口 *exit*      入口 *entry*

In the diagram, you enter at the square labelled *entry* and exit at the  
square labelled *exit*. You can move horizontally and vertically along  
the white squares, but must stay off the coloured squares. Each square  
can only be visited once.

By moving this way and adding the numbers in the squares you pass  
through, what is the highest sum you can get?

28. 一捆草可以供一匹马吃 2 天、可以供一头牛吃 3 天、可以供一只羊吃 12 天。有一个农夫共有 22 捆草用来喂一匹马、一头牛和一只羊。请问他的这些牧草可以持续多少天？

A bale of hay can be eaten by a horse in 2 days, by a cow in 3 days and by a sheep in 12 days. A farmer has 22 bales of hay and one horse, one cow and one sheep to feed. How many days will his bales last?

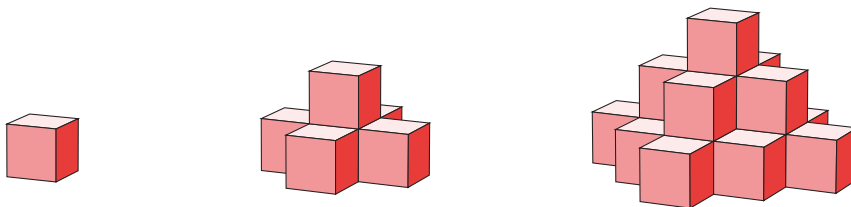
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29. 如果一个数各位上的数字都是奇数，则我们称这个数为“奇异数”。例如，9、57、313 都是奇异数。但是 50 与 787 则不是奇异数，因为 0 与 8 都不是奇数。请问从 1 开始到 999 总共有多少个数是奇异数？

A number is oddtastic if all of its digits are odd. For example, 9, 57 and 313 are oddtastic. However, 50 and 787 are not oddtastic, since 0 and 8 are even digits. How many of the numbers from 1 to 999 are oddtastic?

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30. 小亚用单位正立方体组建一组如图所示的立体图形。在第一个图中，他用了 1 个正立方体；在第二个图中，他用了 6 个正立方体；在第三个图中，他用了 19 个正立方体。请问小亚构造第五个图需要用多少个正立方体？



Oliver used small cubes to build a set of solid shapes as shown. In the first shape, he used 1 cube; in the second shape, he used 6 cubes; in the third shape, he used 19 cubes. How many cubes did Oliver use to build his fifth shape?

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