

**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.

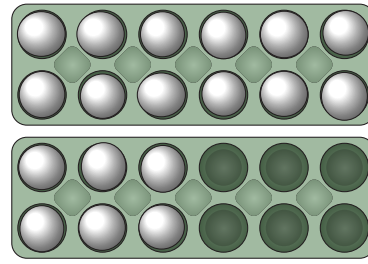
**Reminder: You may sit this competition once, in one division only, or risk no score.**

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

1. 请问这些蛋匣里有多少颗蛋?

How many eggs are in these cartons?

- (A) 12            (B) 15            (C) 16  
(D) 18            (E) 21



2. 请问以下哪一个选项内的数最大?

Which one of the following is the largest number?

- (A) 401            (B) 410            (C) 14            (D) 140            (E) 44

3. 请问以下哪一个选项内的长度等于 3m?

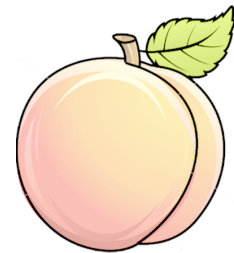
Which of the following is equal to 3m?

- (A) 3 cm            (B) 30 cm            (C) 300 cm            (D) 3000 cm            (E) 36 cm

4. 一个果盘内有 8 颗桃子, 在每位小孩各取走一颗后, 果盘内还剩下了一颗桃子。请问有多少位小孩?

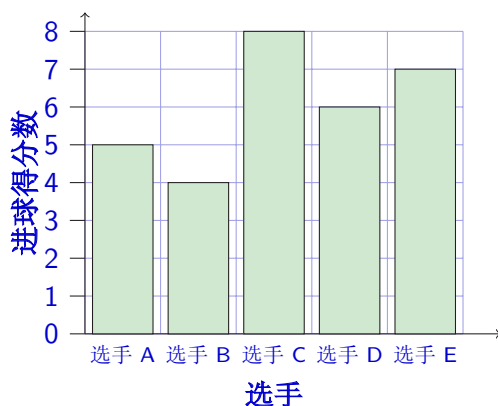
A bowl has 8 peaches. After the children take one each, there is one peach left. How many children are there?

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



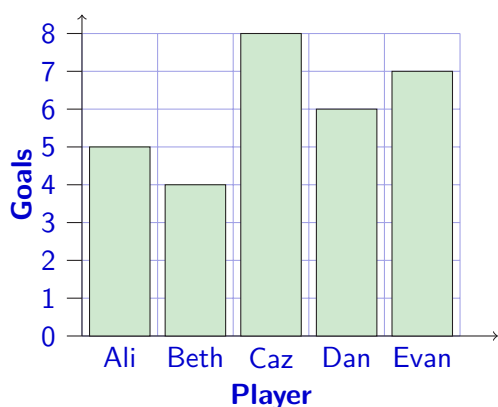
5. 某支球队有 5 位选手。  
右表显示每位选手在某场球赛的进球得分。  
请问哪一个选项内选手的进球得分第二高？

(A) 选手 A      (B) 选手 B      (C) 选手 C  
(D) 选手 D      (E) 选手 E



- A Runnyball team has 5 players.  
This graph shows the number of goals each player scored in a tournament.  
Who scored the second-highest number of goals?

(A) Ali              (B) Beth              (C) Caz  
(D) Dan              (E) Evan



6. 请问 1089 的下一个正整数是什么？

The next counting number after 1089 is

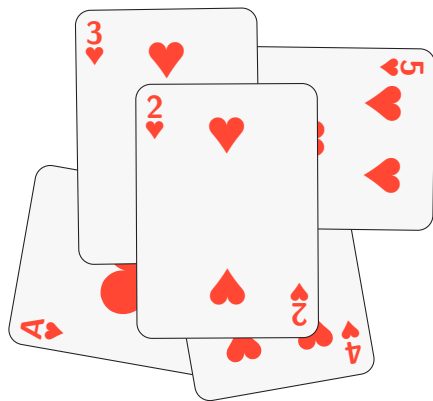
(A) 1090              (B) 10810              (C) 1910              (D) 1900              (E) 1009

7. 这些牌一次一张地掉落在桌上。  
请问它们掉落的顺序为哪一个选项内的顺序？

These cards were dropped on the table, one at a time.

In which order were they dropped?

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



8. 这个表格显示六位小孩所拥有的宠物。  
请问哪一位男孩拥有一只狗？

(A) 小亚            (B) 小蔡            (C) 小方  
(D) 小何            (E) 小德

The table shows the pets six children own.  
Which boy owns a dog?

(A) Alex            (B) Chris            (C) Finn  
(D) Jo            (E) Teejay

|    | 猫  | 狗  | 鱼  |
|----|----|----|----|
| 女孩 | 小蔡 | 小何 | 小珊 |
| 男孩 | 小德 | 小方 | 小亚 |

|       | Cat    | Dog  | Fish |
|-------|--------|------|------|
| Girls | Chris  | Jo   | Sam  |
| Boys  | Teejay | Finn | Alex |

9. 小菲目前位于第 1 竖街与第 1 横路的交口。  
她的学校位于第 4 竖街与第 3 横路的交口。  
请问她必须依照下列哪一个选项行走才能  
抵达学校？

(A) 向东走 4 段, 再向北走 3 段  
(B) 向西走 3 段, 再向北走 4 段  
(C) 向西走 4 段, 再向北走 2 段  
(D) 向东走 3 段, 再向北走 2 段  
(E) 向北走 2 段, 再向南走 2 段



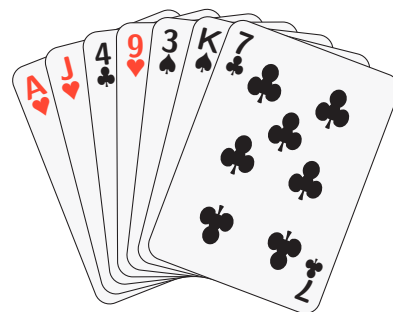
Sophia is at the corner of 1st Street and 1st Avenue. Her school is at the corner of 4th Street and 3rd Avenue.

To get there, she walks

(A) 4 blocks east, 3 blocks north  
(B) 3 blocks west, 4 blocks north  
(C) 4 blocks west, 2 blocks north  
(D) 3 blocks east, 2 blocks north  
(E) 2 blocks north, 2 blocks south



10. 小杰玩牌，这是他手上的牌。  
小安从小杰手上的牌中随意抽出一张。  
请问下列哪一个选项内的牌被小安抽到的机会最大？



- (A) 一张红心 (♥)  
(B) 一张方块 (♦)  
(C) 一张黑桃 (♠)  
(D) 一张有图片的牌 (J、Q 或 K)  
(E) 一张偶数点的牌

Jake is playing a card game, and these are his cards.

Elena chooses one card from Jake at random.

Which of the following is Elena most likely to choose?

- (A) a heart (♥)                      (B) a diamond (♦)                      (C) a spade (♠)  
(D) a picture card (J, Q or K)                      (E) an even-numbered card

11-20 题，每题 4 分

Questions 11 to 20, 4 marks each

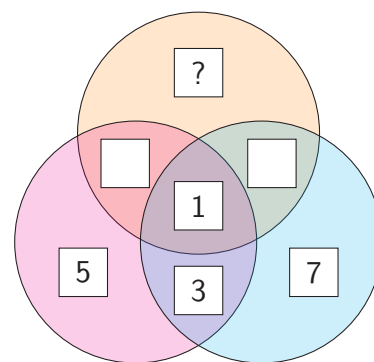
11. 在一个填数益智游戏中，每个小方格内恰填一个正整数，  
使得每个圆内的四个数之和都必须等于 13。  
请问最顶端处小方格内所填的数是什么？

In Jacqui's puzzle, a number is put in each box.

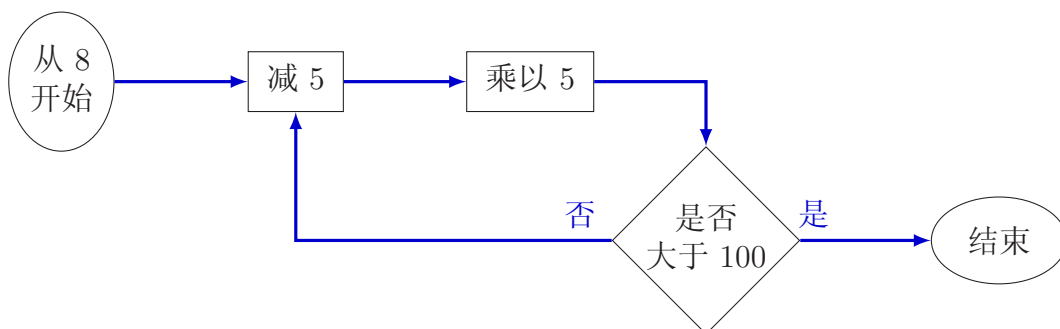
In each circle, the four numbers must add to 13.

Which number goes in the top box?

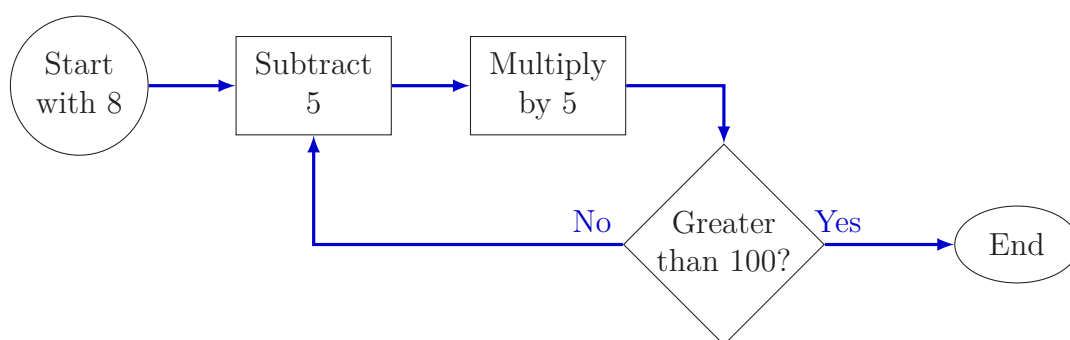
- (A) 2              (B) 3              (C) 4              (D) 5              (E) 6



12. 小雄根据这个流程图的指示操作。请问最后他所得到的数是什么？

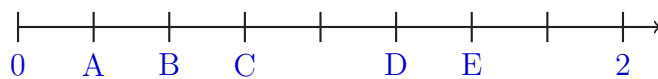


Noah follows the instructions in this flow chart. What number does he end with?



- (A) 120      (B) 150      (C) 200      (D) 225      (E) 250

13. 在这一条数线上，请问数  $\frac{1}{2}$  的位置在哪里？



On this number line, where would the number  $\frac{1}{2}$  be?

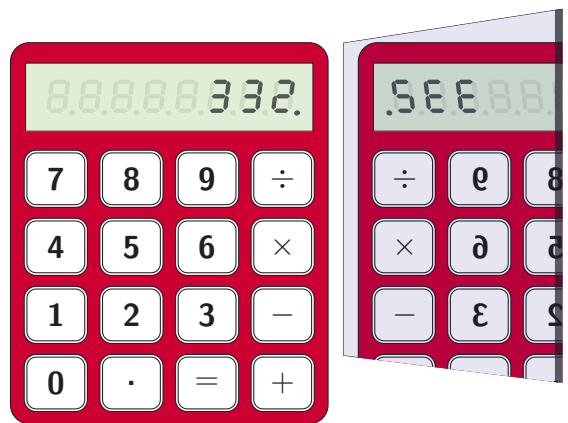
- (A) A      (B) B      (C) C      (D) D      (E) E

14. 当小贝放一个镜子靠近她的计算器，有时候镜子内显示的数码会拼出一些英文单字。请问在镜子内拼出‘BESSIE’的数是什么？

When Bessie puts a mirror next to her calculator, the digits sometimes spell words in the mirror.

Which number spells ‘BESSIE’ in the mirror?

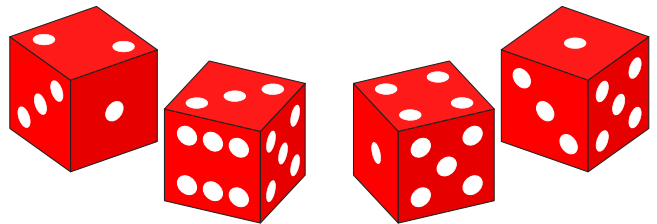
- (A) 315538      (B) 835513      (C) 832213  
(D) 815312      (E) 312238



15. 从这个方向看着这四枚标准的骰子，请问总共有多少个点无法被看见？

Looking at this view of four dice, how many dots cannot be seen?

- (A) 21 (B) 28 (C) 32 (D) 36 (E) 45



16. 一枝铅笔的售价为 25 元、一把尺的售价为 80 元。我用 500 元购买一把尺与尽可能多枝笔。请问我最后找回多少元？

- (A) 25 元      (B) 20 元      (C) 15 元      (D) 10 元      (E) 5 元

A pencil costs 25 cents and a ruler costs 80 cents.

With \$5 I bought one ruler and as many pencils as I could afford.

What change did I get?

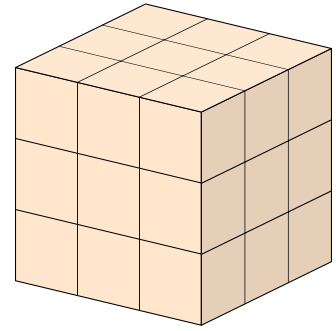
- (A) 25 cents      (B) 20 cents      (C) 15 cents      (D) 10 cents      (E) 5 cents

17. 用 27 个单位正立方体拼成一个  $3 \times 3 \times 3$  的大正立方体。  
请问要增加多少个单位正立方体才足以拼成一个  $4 \times 4 \times 4$  的大正立方体?

27 identical cubes are used to make this  $3 \times 3 \times 3$  cube.

How many more are needed to make a  $4 \times 4 \times 4$  cube?

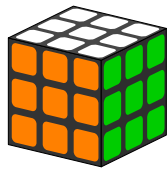
- (A) 1      (B) 25      (C) 27      (D) 36      (E) 37



18. 小咪有一张 \$50 的礼券可以在玩具店内花用，但是使用礼券时店家不找零。以下是她喜欢的玩具之清单。她试着在 \$50 之内花费尽可能的多。



\$24



\$14



\$6



\$39

假设每种玩具都不买超过一个，请问这张礼券还有多少钱没有用完?

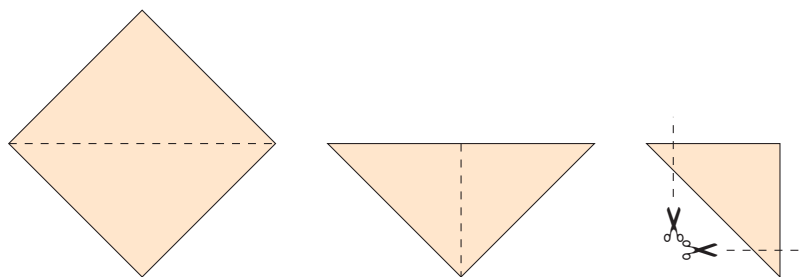
Meena has a \$50 gift voucher to spend in a toyshop, but they won't give change from the voucher. Here is a short list of toys she would like. She tried to spend as much of the \$50 as possible.

If she buys no more than one of each toy, how much of the voucher will not get used?

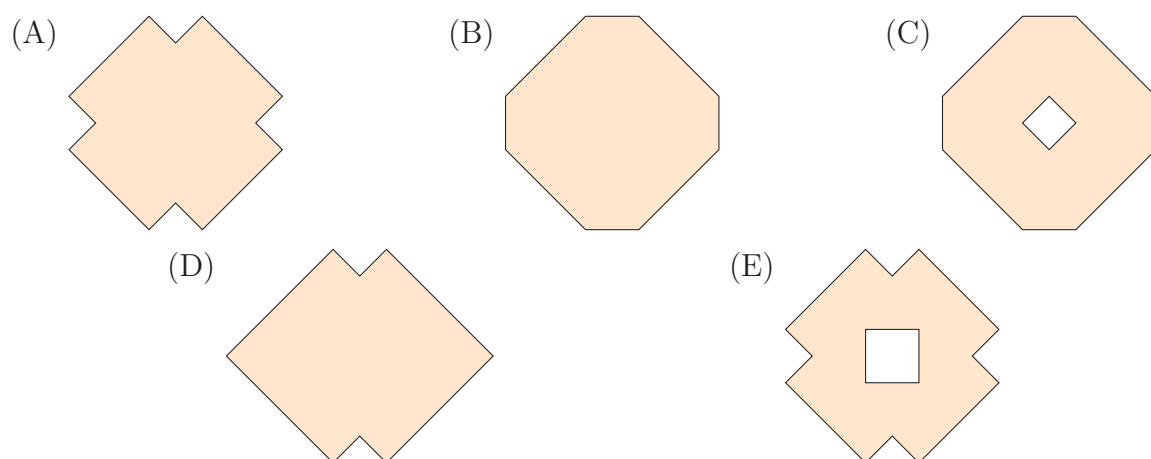
- (A) \$1      (B) \$3      (C) \$5      (D) \$7      (E) \$9



19. 将一张正方形纸片沿着它的对角线折迭二次，接着将它的两个角剪除，如图所示。当将这张纸重新展开后，它的外观是哪一个选项内的图案？



A square piece of paper is folded twice along its diagonals, as shown in the diagram. Two corners are then cut off. When the paper is unfolded, what will it look like?



20. 小佩费时 30 分钟走到学校。

有时候她骑自行车上学，她骑车的速度是走路的两倍。

偶而，她的妈妈用汽车载她上学，汽车的速度是她骑车速度的三倍。请问她乘汽车去学校需费时多少分钟？

It takes Preeti 30 minutes to walk to school.

Sometimes she goes on her bike and she cycles twice as fast as she walks.

Occasionally, her mother takes her in the car, which goes three times as fast as her bike. How many minutes does it take to get to school in the car?

- (A) 2                      (B) 4                      (C) 5                      (D) 10                      (E) 15

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

21. 在我的舞蹈课里, 有 14 位学生比小柏高、有 12 位比小艾矮。有四位学生都比小艾矮也都比小柏高。请问我的舞蹈课里共有多少位学生?

In my dance class, 14 students are taller than Bob, and 12 are shorter than Alice. Four students are both shorter than Alice and taller than Bob. How many students are in my dance class?

- (A) 22                      (B) 24                      (C) 26                      (D) 28                      (E) 30

22. 我的姐姐与我玩一个游戏, 她任选两个正整数由我来猜。当我告诉她一个数, 她把我这个数乘以她的第一个数, 然后加上第二个数。

当我说 15, 她回答 50。当我说 2, 她回答 11。

如果我说 6, 她应该回答什么?

My sister and I are playing a game where she picks two counting numbers and I have to guess them. When I tell her a number, she multiplies my number by her first number and then adds her second number.

When I say 15, she says 50. When I say 2, she says 11.

If I say 6, what should she say?

- (A) 23                      (B) 27                      (C) 35                      (D) 41                      (E) 61

23. 有一位六年级学生在 5 天内存了 100 元, 且他每天所存的钱都比前一天多 5 元。请问这位学生在第五天存了多少钱?

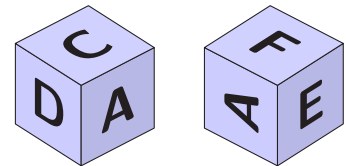
- (A) 20 元                      (B) 25 元                      (C) 30 元                      (D) 40 元                      (E) 50 元

A year 6 student saved 100 cents in 5 days, each day saving 5 cents more than the previous day. How many cents did she save on the fifth day?

- (A) 20 cents                      (B) 25 cents                      (C) 30 cents                      (D) 40 cents                      (E) 50 cents

24. 有一个正立方体的六个面上分别有字母 A、M、C、D、E、F, 其中从不同方向看去的二个视图如图所示。

我将这个正立方体放在桌上使得正前方显示 C。若我在这个正立方体的后方, 则我会看见什么?

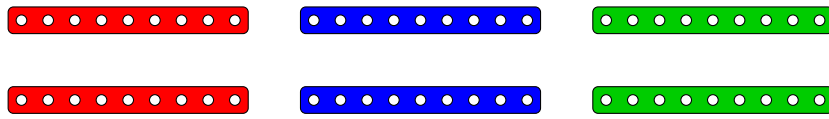


A cube has the letters A, M, C, D, E and F on its six faces. Two different views of the cube are shown.

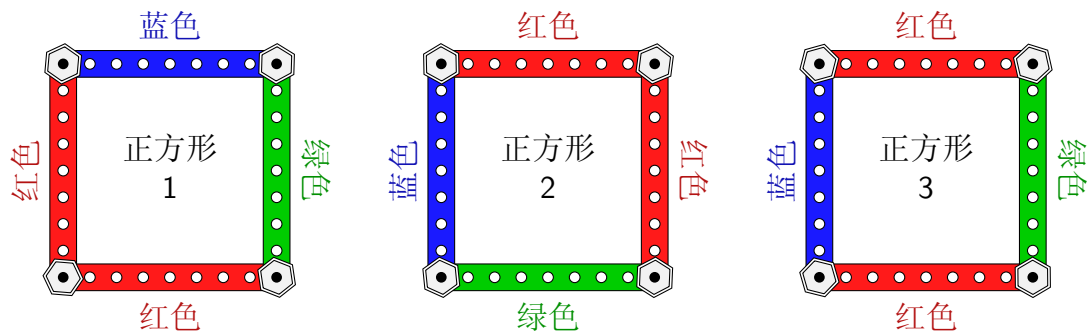
I place the cube on the table so that the front shows C. If I look at the back of the cube, what will I see?

- (A) D                      (B) E                      (C) L                      (D) W                      (E) F

25. 小莎有六片连接条，其中有二个红色、二个蓝色、二个绿色。她想用其中的四片拼成一个正方形。

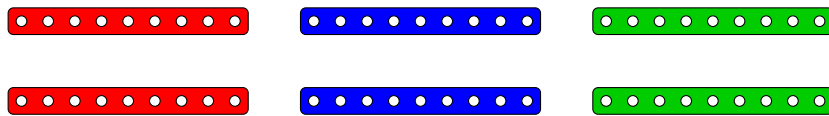


小莎把下图中的正方形 1 与正方形 2 视为相同的，因为正方形 2 经过旋转与翻转后颜色会与正方形 1 吻合。而她把正方形 3 与正方形 1 视为不同，因为无论如何旋转或翻转，两个红色的边永远是相对的，不可能与正方形 1 吻合。

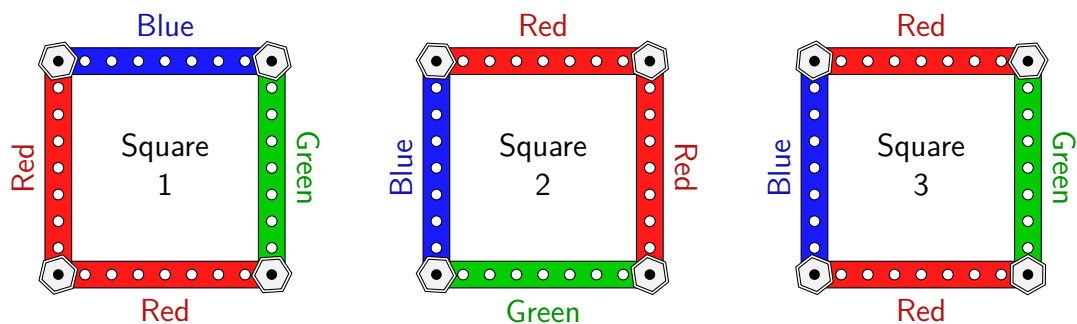


请问她总共可以拼出多少种不同的正方形？

Shirley has six pieces of her construction kit: two red, two blue and two green. She wants to build a square using four of the pieces.



Shirley considers Square 1 below to be the same as Square 2, since the colours match once Square 2 is turned over and rotated. However she considers Square 3 to be different from Square 1, since no matter how it is turned, the two red sides are always opposite, and cannot match Square 1.



How many different squares could she build?

- (A) 4                      (B) 8                      (C) 12                      (D) 16                      (E) 18

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 an integer from 0 to 999  
in the space provided on the answer sheet.

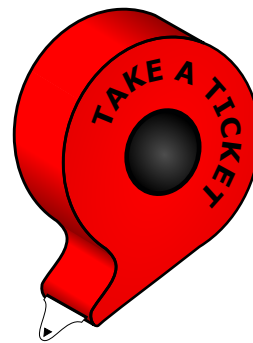
Questions 26–30 are worth 6, 7, 8, 9 and 10 marks, respectively.

26. 在一家商店，每位顾客必须从机器中抽出一张号码牌，然后等待叫号。这卷号码牌的编号从 000 直到 999。  
当我与我的邻居到此商店时，我与我的邻居抽出的连续两个号码之和为 777。  
请问紧邻我们后面的下一张号码是什么？

At my local greengrocer, you take a ticket from the machine and wait until your number is called. The roll of tickets goes from 000 up to 999.

When I was there last week with my neighbour, we took two tickets in a row and our two numbers added to 777.

What was the next ticket number after ours?



27. 某个夏令营共有 390 位小孩参加。  
其中女孩人数的三分之一等于男孩人数的一半。请问共有多少位女孩参加此夏令营？

There are 390 children at a summer camp.

One-third of the number of girls is equal to one-half of the number of boys. How many girls are there?

28. 请问从 100 到 999 的整数中总共有多少个数恰只有一个数字为零？

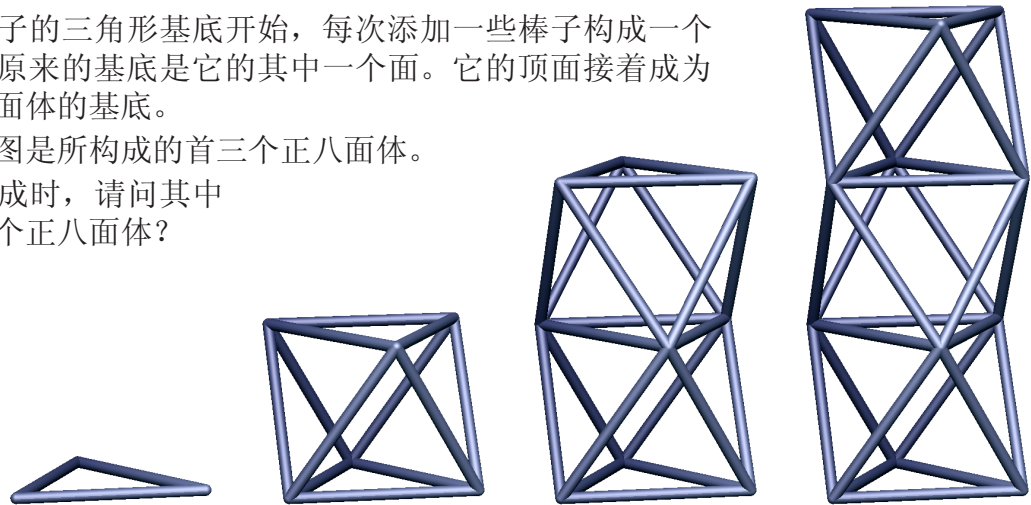
How many of the numbers from 100 to 999 have exactly one zero digit?

29. 恰好使用 2019 根棒子可构成一座塔。

从用三根棒子的三角形基底开始，每次添加一些棒子构成一个正八面体，原来的基底是它的其中一个面。它的顶面接着成为下一个正八面体的基底。

以下所示的图是所构成的首三个正八面体。

当这座塔完成时，请问其中总共有多少个正八面体？



A tower is built from exactly 2019 equal rods.

Starting with 3 rods as a triangular base, more rods are added to form a regular octahedron with this base as one of its faces. The top face is then the base of the next octahedron.

The diagram shows the construction of the first three octahedra.

How many octahedra are in the tower when it is finished?

30. 约翰比他的妻子玛丽大一岁。他们三位小孩，小孩之间的年龄间隔为二岁。

约翰与玛丽年龄的乘积小于 2019，三位小孩年龄的乘积也小于 2019。

明年，这些乘积都将大于 2020。

请问这五个人今年的年龄总和为多少？

John is one year older than his wife Mary. They have three children, whose ages are two years apart.

The product of John and Mary's ages is less than 2019. The product of the three children's ages is also less than 2019.

Next year both these products will be greater than 2020.

This year, what is the sum of all five ages?

草稿纸  
Scratch Paper

草稿纸  
Scratch Paper

