

Part A: Questions 1 – 6

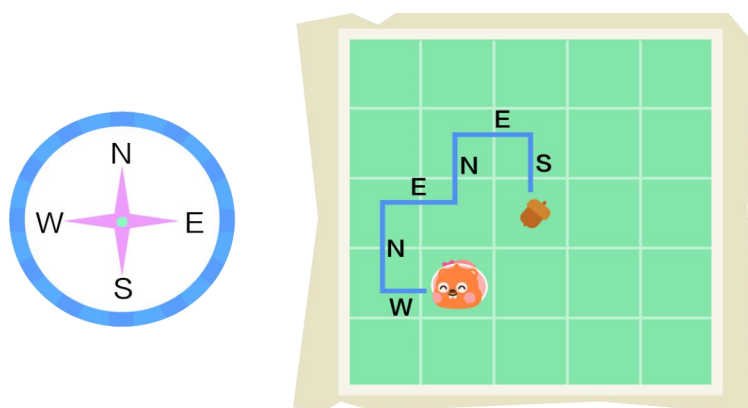
Part A: Questions 1–6

Multiple Choice Questions (3 points each)

1. The Squirrel Gathering Pine Cones

A squirrel is collecting pine cones in the forest. His mother gave him a compass, as shown in the bottom left image, and a note with instructions on which directions to follow to find the pine cones.

For example, with directions "WNENES," the squirrel's path is as shown in the bottom right image.



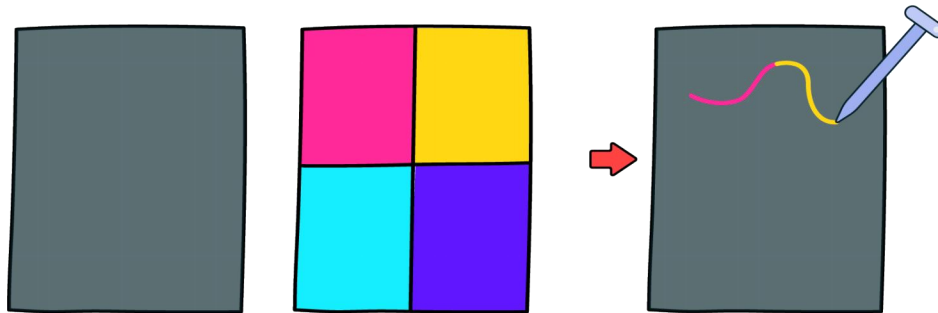
This time, the instructions given by the mother are "NNEENE." Which of the following shows the correct path?

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

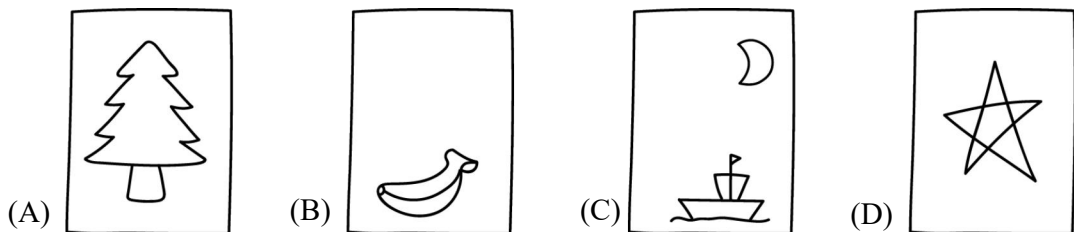
2. The Magic Scratch Art

Scratch art paper has a black coating on the surface, with bright colors underneath. By using a sharp object to remove the black layer, you can reveal the colors below and create a beautiful picture.

The paper has four hidden colors underneath. We initially see black scratch art paper, but when the coating is scratched, the underlying colors are revealed.



Which of the following pictures will show three colors when scratched?



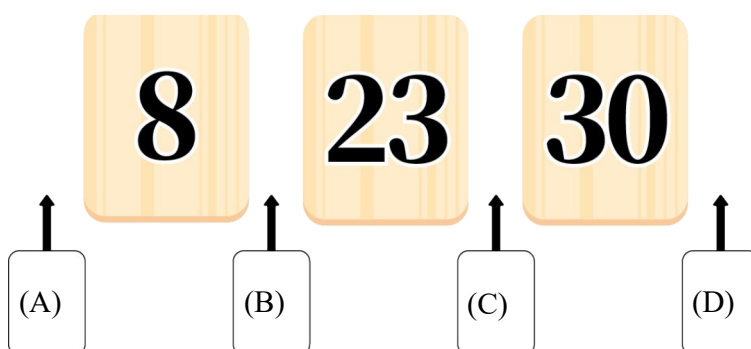
3. Sorting Building Blocks

A child is picking blocks numbered from 1 to 30 from a basket and wants to arrange them in ascending order.



He devised a method: first, he picks a block and places it on the table. Then, if the next block has a larger number, he places it to the right; if it has a smaller number, he places it to the left.

He has already placed three blocks. Now he picks up block number 19. Where should he place it?



4. Guess My Name



A fox has created a Rune-based name by transforming the letters of its real name according to the table below.

F	U/V	th	A	R	K/C	G	W
H	N	li	Y	i	P	Z/X	S
T	B	E	M	L	ng	O	D

If its Rune name is as shown, what is the fox's real name?



(A) mfd





(B) dae

(C) dfe

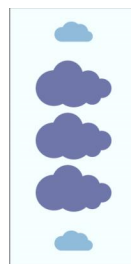
(D) dam

5. Weather Forecast

In the animal world, cloud signals are used to indicate weather. Different sizes of clouds represent different weather conditions.

			
暴雨	小雨	多云	晴朗
HeavyRain	Light Rain	Cloudy	Sunny

One day, a monkey on the island saw the following pattern of clouds:

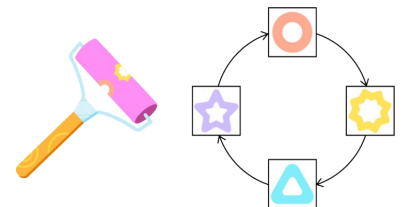


Due to some transmission errors, a small cloud may have been mistakenly represented as a large one, or vice versa. Based on the code table, what is the correct weather forecast indicated by this pattern?





- (A) Heavy Rain (B) Light Rain (C) Cloudy (D) Sunny

6. Rolling Pattern

A child found a magical rolling cylinder that prints four different patterns in sequence as it rolls forward or backward.



Which of the following is NOT a pattern produced by this rolling cylinder?

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

Part B: Questions 7–9


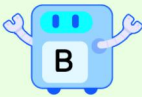
Each question has three sub-questions, worth 2 points each.

Each answer is an integer between 0 and 99.

7. Robots Collecting Trash

The map below shows a park with numbers indicating the amount of trash left by visitors. Two robots, A and B, collect all trash they find in the park according to their respective routes.

Robot A's route: $\uparrow \uparrow \leftarrow$, Robot B's route: $\uparrow \leftarrow \uparrow$

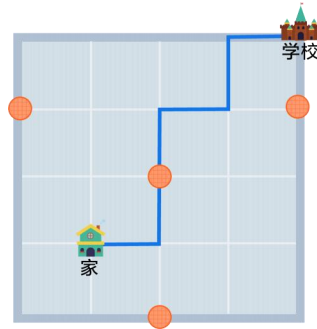
1	3	1
0	8	6
0	1	3
1		

- Question 1: How much trash does Robot A collect?
- Question 2: How much trash does Robot B collect?
- Question 3: How much more trash does the robot that collects more trash pick up compared to the other robot?

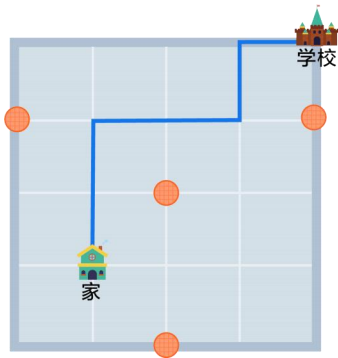
8. The Way to School

There are several paths from the school to the child's home. Each section of the route takes 1 minute, and red dots at intersections indicate traffic lights, which require a 1- minute stop.

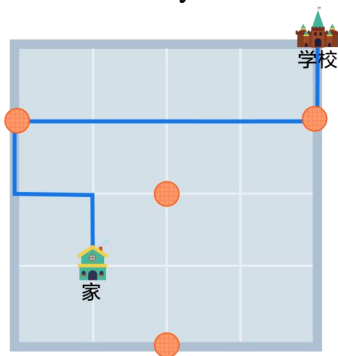
For example, the route taken yesterday took 7 minutes.



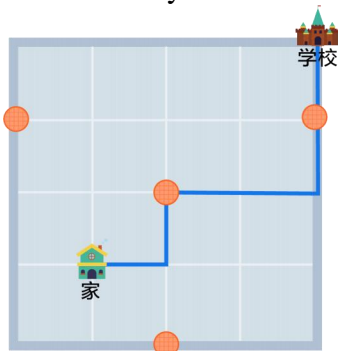
Question 1: How many minutes does this route take to get to school?



Question 2 : How many minutes does this route take to get to school?

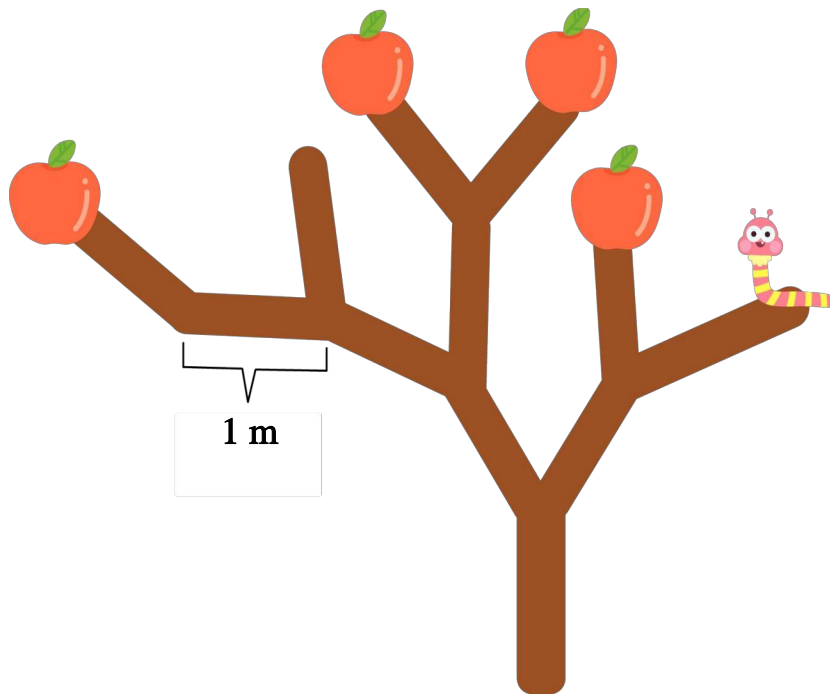


Question 3 : How many minutes does this route take to get to school?



9. The Hungry Worm

A worm sits at the end of a branch and wants to eat apples scattered along the branch. Each section of the branch is 1 meter long.



- Question 1: What is the minimum distance the worm must crawl to reach the closest apple?
- Question 2: What is the minimum distance the worm must crawl to reach the farthest apple?
- Question 3: What is the minimum distance the worm must crawl to eat all the apples?

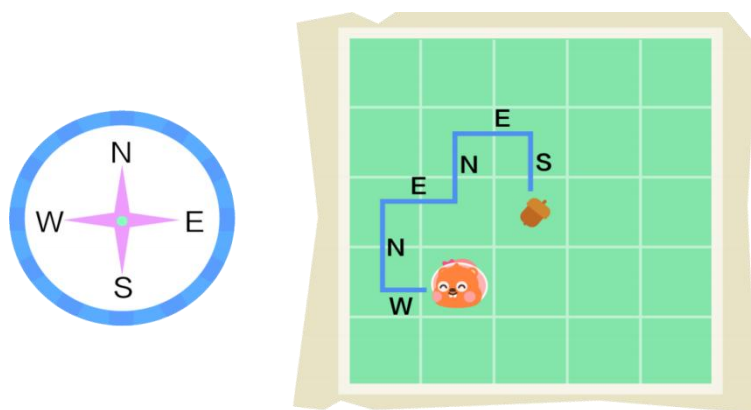
Part A: Questions 1 – 6

单选题（每题 3 分）

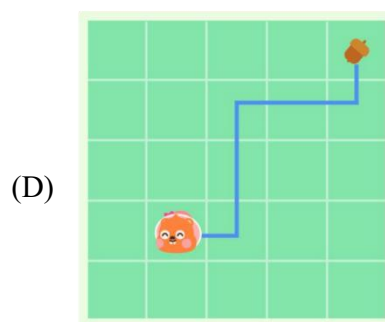
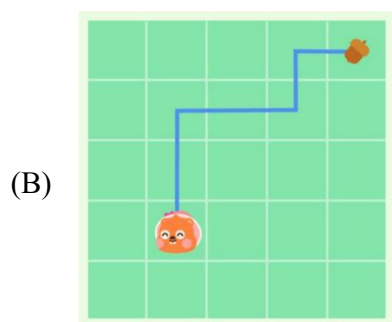
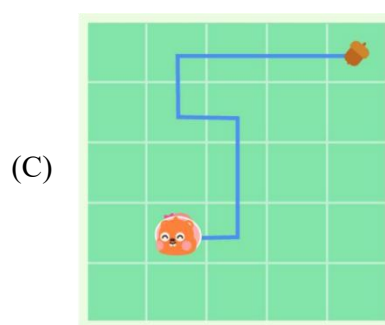
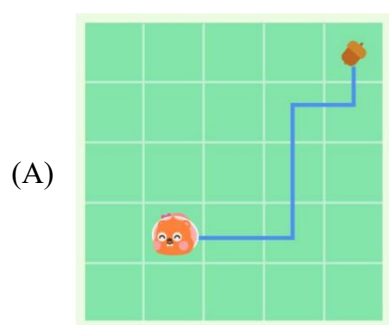
1. 采松果的小松鼠

小松鼠要到森林里采集松果，妈妈给他带上了一个指南针，如左下图所示。妈妈还给了他一张纸条，纸条上写着小松鼠应该行走的方向指令，依据这个指令就能采到松果。

例如：方向指令为 W N E N E S，小松鼠的行走路线则如右下图所示。

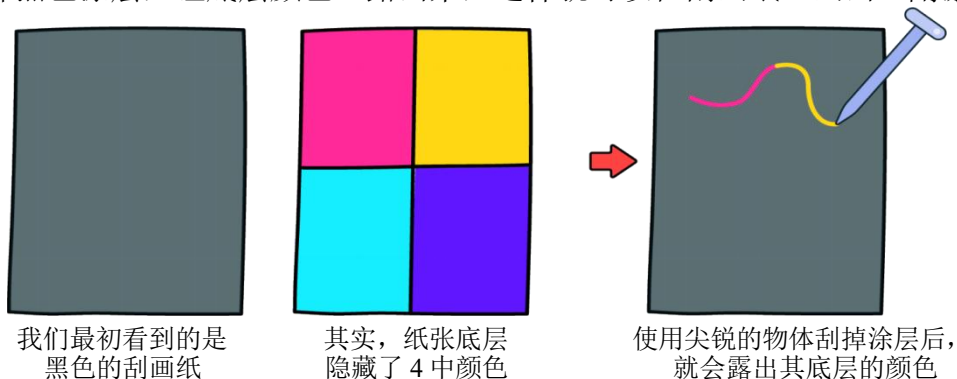


这次妈妈给小松鼠的指令为 N N E E N E。请问下列哪个是小松鼠的行走路线？

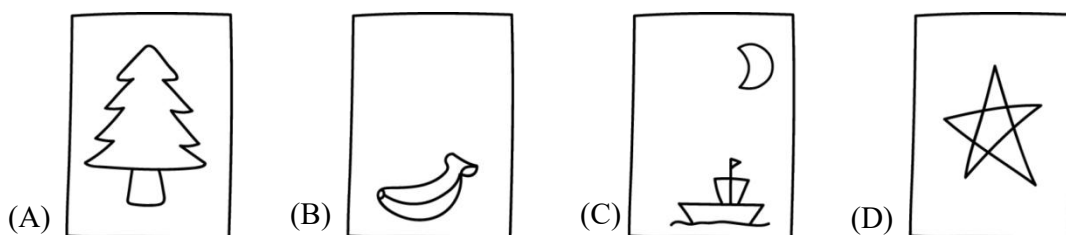


2. 神奇的刮画

刮画纸是一种表层有黑色涂层，底层颜色明亮的特殊纸。我们可以使用尖锐的物体刮掉黑色涂层，让底层颜色显露出来，这样就可以在刮画纸上画出一副漂亮的图画。



请问当使用尖锐物体绘制以下图画时，哪张图片会显示出3种颜色？



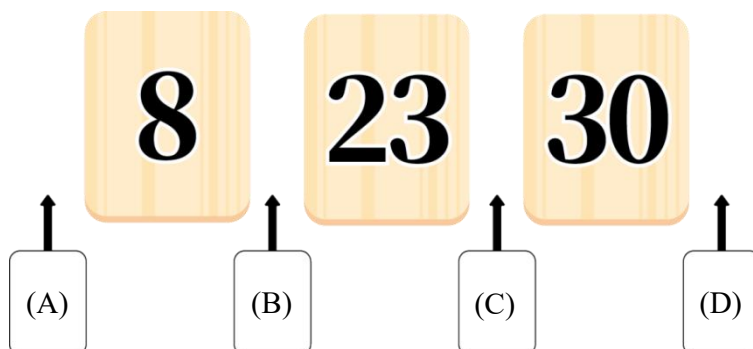
3. 整理积木

一个小朋友从篮子里拿积木，这些积木上标有 1-30 的数字，他想将积木从筐中逐一取出并按照 1-30 从小到大的顺序排序。

他想到一个办法：先拿出一块积木放在桌子上，然后再拿出一块积木。如果第二次拿出的积木数字比第一次拿出的大就放到第一块积木的右边，如果第二次拿出的积木数字比第一次小就放到第一次积木的左边。



现在他已经拿出了三块积木并排放好。接下来他拿出标有数字 19 的积木，请问这块积木应该放入哪个位置？



4. 猜猜我叫什么？



小狐狸给自己取了一个卢恩密语的名字。
他将自己真实名字的字母按照下方表格进行转换。

F	UV	th	A	R	K/C	G	W
H	N	li	Y	i	P	Z/X	S
T	B	E	M	L	ng	O	D

如果他的卢恩密语的名字叫：



那么小狐狸的真实名字叫什么？

(A) mfd

(B) dac

(C) dfe

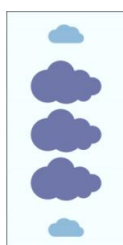
(D) dam

5. 天气预报

动物世界发明了一种信号云，使用不同大小的云朵来表示天气状况，如下方编码表所示。

			
			
			
			
			
暴雨	小雨	多云	晴朗

有一天，海岛上的小猴子看到了如下图案：



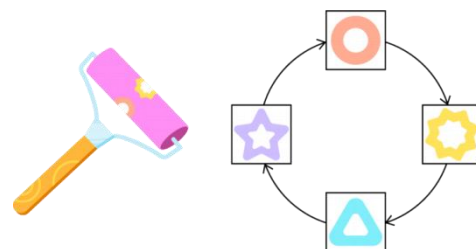
由于信号传递过程中出现了一些错误，具体表现为：一朵小烟雾云被误认为是一朵大烟雾云或者是一朵大烟雾云被误认为是一朵小烟雾云。

请问根据编码表，观测到的图案所对应的正确信息应该是哪一个？

- (A) 暴雨 (B) 小雨 (C) 多云 (D) 晴朗

6. 滚动的图案

小朋友发现了一个神奇的滚筒，可以印出四种图案。在滚筒滚动的过程中，图案会按照顺序依次出现。箭头表示滚筒向前滚动一周的图案排列顺序（滚筒也可以向后滚动进行作画）。



请问，以下哪个图案不是滚筒滚动时生成的图案？





Part B: Questions 7–9

每一个大题有三个小题，每题 2 分。
每小题的答案都是一个介于 0-99 的整数。

7. 机器人收垃圾

下图为公园地图。每个方块中的数字代表游客留下的垃圾数量。公园内有两个机器人，机器人 A 和机器人 B，它们会按照箭头指示的路线进入不同的方格，并收集其中的所有垃圾。

机器人 A 的运动路线是：↑ ↑ ← ； 机器人 B 的运动路线是：↑ ← ↑

1	3	1
0	8	6
0	1	3
1		

问题 1：机器人 A 收集了多少垃圾？

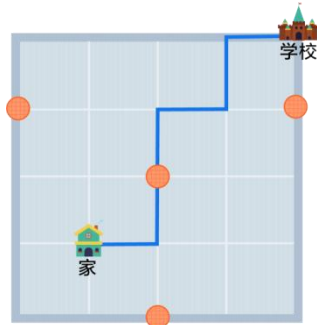
问题 2：机器人 B 收集了多少垃圾？

问题 3：收集垃圾多的机器人比收集垃圾少的机器人多收集了多少垃圾？

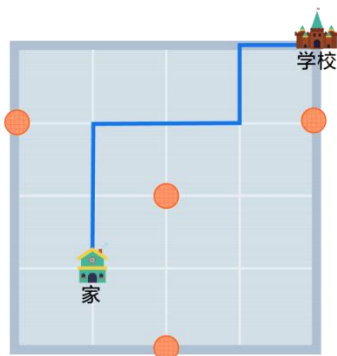
8. 上学的路

从小朋友的家到学校有多条道路可以选择。地图上每个路段的行驶都需要花费1分钟的时间。十字路口的红点表示交通灯，遇到交通灯需要停留1分钟。

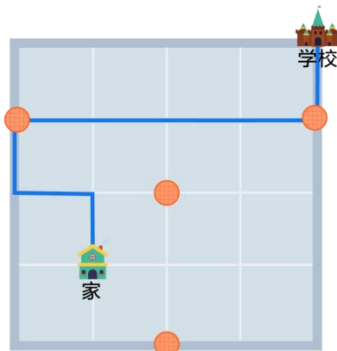
例如：昨天小朋友所走的路线如图所示，花费了7分钟。



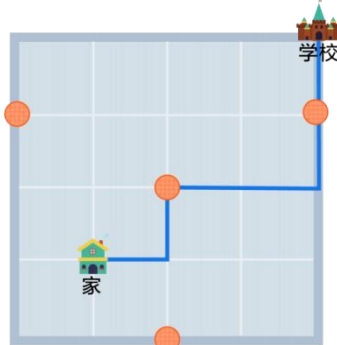
问题 1：下面这条上学的路，需要花费几分钟？



问题 2：下面这条上学的路，需要花费几分钟？

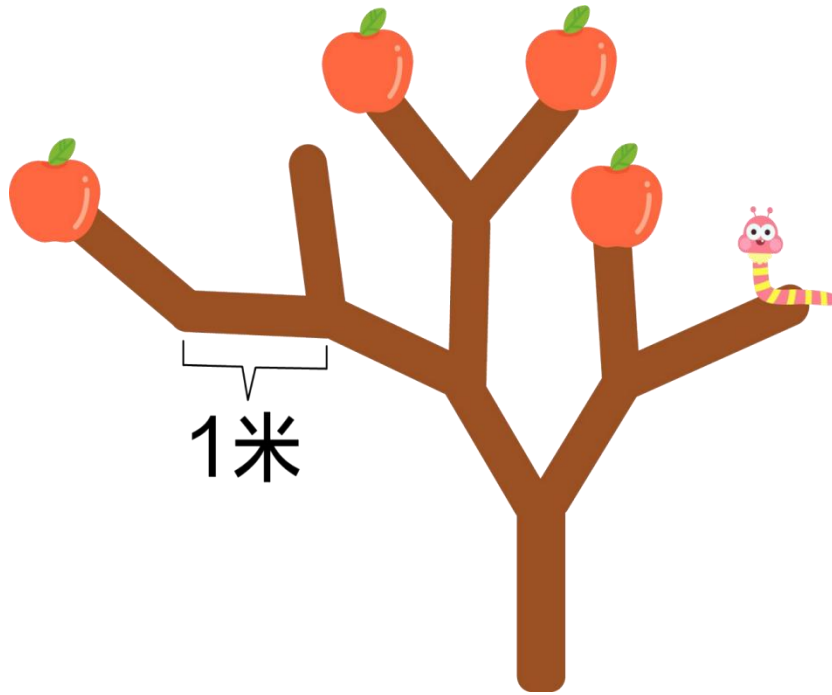


问题 3：下面这条上学的路，需要花费几分钟？



9. 贪吃的虫子

一只虫子坐在一棵大树树枝的末端，想通过沿着树枝移动来吃掉苹果（树枝的每个部分都有1米长）。



问题 1：吃掉距离它最近的苹果最少需要爬几米？

问题 2：吃掉距离它最远的苹果最少需要爬几米？

问题 3：吃掉所有苹果最少需要爬几米？