

令和8年度 第1回

令和8年2月10日実施

## 京華高等学校 入学試験問題 英語

1 次の英文を読んで後の【問い】に答えなさい。

## Rubik's Cube Record Smashed by College Students

June 26, 2025

Students at Purdue University have created a robot that can solve a Rubik's Cube faster than any robot ever. The robot, which they call "Purdubik's Cube," solves the cube in just 0.103 seconds. That's faster than the time it takes to blink\* your eyes.

The Rubik's Cube was invented in 1974 by Erno Rubik. It rapidly became a popular puzzle worldwide. At first, people just wanted to solve the puzzle. But soon, one group of users had a new goal – to solve the cube as quickly as possible. These people are known as ①"speedcubers."

Human speedcubers can solve a Rubik's Cube in a few seconds. The (ア)fast time is about 3.05 seconds. That's truly amazing. But thanks to computers and rapidly moving parts, robots can do even better. In 2020, a group of students at MIT set a record with a robot that solved the cube in 0.380 seconds – less than half a second.

That made an impression on Matthew Patrohay, who was in high school at the time. "I thought, 'That's a really cool project. I'd love to try and beat it someday,'" said Mr. Patrohay.

Now Mr. Patrohay and three other Purdue students have built a robot that can solve a Rubik's Cube far faster. Their "Purdubik's Cube" robot can solve a cube in 0.103 seconds – roughly one-tenth of a second.

Last year, a group of professional engineers (イ)work for Mitsubishi set the previous\* world record with a robot that solved the cube in 0.305 seconds. The robot built by Mr. Patrohay, Aden Hurd, Junpei Ota, and Alex Berta solves the cube nearly ( ② ) times as fast. That earned it the official Guinness World Record.

The team built the robot as part of a senior project. The students met through a program that helps students get real-world work experience. That program helped them build the skills they needed, and it also helped them get support for their work from outside companies.

Purdubik's Cube uses cameras and "computer vision" to rapidly detect the colors of each of the cube's squares. The robot's computer program uses special strategies\* to solve the puzzle quickly. And its motions are very precisely (ウ)control.

To work so quickly, the project uses a special cube that (エ)sit in the middle of the robot's "arms." These arms allow the robot to turn the sides of the cube. But at such high speeds, an ordinary cube falls apart, so the students had to create a stronger cube that would hold together. ③Mr. Patrohay says the robot is ( A ) fast ( B ) "before you even realize it's moving, we've solved it."

Bluetooth technology allows the cube to be scrambled\* remotely by a user. When it's completely scrambled, the robot solves the cube almost instantly.

The students won a school design contest last December with Purdubik's Cube, and they continued to improve the robot after that. Now they're excited to have broken the world record.

One of the students' professors says he's not surprised. "Take brilliant students, give them the tools and opportunities," he says, "And they'll blow your mind."

(注) blink まばたきする previous 前の strategy 戦略 scramble ランダム順にする

## 【問い】

1. 下線部①はどのような人々を指すのか日本語で具体的に説明しなさい。

2. 下線部(ア)～(エ)の語を適する形に変えて書きなさい。
3. 空欄(②)に入れるのに最も適切なものを選び、その記号を答えなさい。
- ア three                      イ four                      ウ five                      エ six
4. 下線部③の英文が「パトロヘイさんは、ロボットがあまりにも速いので『動いていると気づく前にもうキューブを解いてしまっているんです』と話しています」という意味になるよう、空欄(A)、(B)に適切な語を書きなさい。
5. 本文の内容と一致するものには T と、一致しないものには F と答えなさい。
- (1) The Purdue robot completes a Rubik's Cube in less time than it usually takes a person to blink.
  - (2) Mr. Patrohay first became interested in building a Rubik's Cube-solving robot while he was a university student.
  - (3) The students built the "Purdubik's Cube" robot only for fun.
  - (4) The robot trusts cameras and computer vision to recognize the cube's colors.
  - (5) The students had to design a stronger cube because ordinary cubes could not survive the robot's speed.
  - (6) According to one professor, giving talented students the right tools and chances can lead to great results.

2 次の英文を読んで後の【問い】に答えなさい。

Māori have lived in New Zealand ( A ) more than a thousand years. When Captain Cook and his men landed there, they found a tall, strong people ( B ) brown skin and black hair. Māori of those times lived ( C ) wooden houses and had wooden boats. They caught birds and fish and grew sweet potatoes for food. They were also excellent singers and dancers. They were called tangata whenua ('people of the land') because the land was a very important part of their lives. At this time the Māori population was between 100,000 and 150,000.

When the British came it was, in many ways, not a good thing for Māori. Many people, both Māori and Pākehā (the Māori name for white people) died in the battles over land.

People still argue today about the land and who owns it, and many people feel very strongly about it. The Pākehā also brought guns, alcohol, and cigarettes with them, and diseases which were new to Māori. ①All of these things brought terrible trouble to Māori, and many of them died. By 1900 the future seemed hopeless, and the Māori population was down to 50,000, but after a while the population slowly began to grow again.

In the twentieth century many Māori began to live more like the Pākehā. Sir Apirana Ngata, for example, was successful in the Māori world, where he studied the stories, songs, and language of his people, and in the Pākehā world, where he worked in the New Zealand government. But not all the changes were good. Many Māori families left their old homes and moved to the cities, so the old Māori way of life began to die. And the Māori language was dying with it, because Māori children had to speak English, not Māori, at school.

But in the 1960s and 1970s many Māori, especially young ones, began to think seriously about the future. They began to learn the Māori language, and to learn more about the Māori way of life. People began to ask questions about Māori land too. Many Māori argued that the Treaty of Waitangi\* meant different things to Māori and Pākehā, and this meant that Māori had lost land that really belonged to them.

In 1981 the South African rugby team planned to come to New Zealand. Teams from South Africa had visited many times before, but this time was different. ②Many New Zealanders – both Māori and Pākehā – became angry. They did not want New Zealand teams to play against the South Africans, who only chose white players to play for their country, and who did not welcome Māori players into South Africa. But the New Zealand government refused to stop the South African rugby team from playing in New Zealand. People argued about this all over the country; there were some angry fights, and some matches were stopped.

③People were [ア. part イ. an important ウ. that エ. of オ. were カ. Māori キ. realizing] New Zealand, and things began to change. Since 1975 the Waitangi Tribunal\* has listened to arguments about land and decided what should happen. There are

more than 500 kohanga reo – schools where very young children begin to learn Māori – and both Māori and Pākehā can learn the language at school. Māori is an official language, and there are Māori radio and TV stations. Some government offices work in both languages, and some place names have changed. For example, New Zealand’s highest mountain was once called Mount Cook; today it is known as Aoraki Mount Cook, with its Māori and English names used together.

Today there are about 526,000 Māori people in New Zealand – that is about 15 percent of the population. There are still problems for Māori; many of them have worse health than Pākehā, and it is more difficult for them to finish school, get good jobs, and find good houses. And now there are many other people – from the Pacific islands, Asian countries, and countries in Europe – who want a place in New Zealand as well. But Māori are sure to be an important part of New Zealand’s future. Although they nearly disappeared a hundred years ago, today their voice is becoming stronger again.

(注) Treaty of Waitangi イギリスとマオリの間で締結された条約      the Waitangi Tribunal ワイタンギ審判所

### 【問い】

1. 空欄(A)、(B)、(C)に入れるのに最も適切なものを選び、その記号を答えなさい。

ア in                      イ for                      ウ since                      エ with                      オ at

2. 下線部①が指すものを全て、日本語で答えなさい。  
3. 下線部②の理由を、以下の日本語に合うように答えなさい。

自国の代表選手として（ あ ）だけを選び、マオリの選手を（ い ）しなかった南アフリカと、ニュージーランドのチームが対戦することを望んでいなかったため。

4. 下線部③の [ ] 内を「人々はマオリがニュージーランドの重要な一部であることに気づき始めた」という意味になるように並べ替え、記号で答えなさい。  
5. 次の質問に対する答えとして最も適切なものを選び、その記号を答えなさい。

(1) Why did the old Māori way of life begin to die?

- ア Many Māori started living like South Africans.  
イ Māori people decided to leave their hometowns.  
ウ The Pākehā forced Māori to change the way of life.  
エ Modernization came to New Zealand.

(2) What was New Zealand’s highest mountain once called?

- ア Captain Cook              イ Mount Cook              ウ Aoraki Mount Cook      エ Mount Waitangi

6. 本文の内容と一致するものには T と、一致しないものには F と答えなさい。

- (1) Māori people used wooden guns to get birds and fish.  
(2) The Māori population has been declining since the 1960s.  
(3) There are schools in New Zealand where you can learn Māori.  
(4) There used to be Māori radio and television stations, but they no longer exist.  
(5) It is very easy for Māori to get good jobs because they can speak Māori language and English.

3 次の各組の英文がほぼ同じ意味になるように、空欄に入る英単語 1 語を答えなさい。

1. I don't know what to say.  
I have no ( ) what to say.
2. I saw him for the first time when I went to the party.  
I had not ( ) him until I went to the party.
3. I go to school by bus.  
I ( ) a bus to school.
4. My teacher said "I am tired."  
My teacher said that he ( ) tired.
5. You should not be shy.  
( ) be shy.
6. Nobody read her book.  
Her book wasn't read by ( ).
7. To swim in the pool is dangerous.  
( ) is dangerous to swim in the pool.
8. There was an accident, so the road was closed yesterday.  
The road was closed yesterday ( ) there was an accident.
9. You got a letter from Jane.  
Jane ( ) you a letter.
10. The boy playing soccer over there is my brother.  
The boy ( ) is playing soccer over there is my brother.

4 次の日本語を英語に直しなさい。

1. このお茶は熱すぎて飲めないよ。
2. 白山駅(Hakusan Station)までの行き方を教えてくださいませんか。
3. 信濃川(the Shinano River)は日本で 1 番長い川です。
4. 彼女の曲は世界中の人に愛されています。
5. 私の車は彼女のとは異なります。