英　　語（リーディング）

各大問の英文や図表を読み，解答番号 $\boxed{1}$ ～ $\boxed{44}$ にあてはまるものとして最も適当な選択肢を選びなさい。

第 1 問 （配点　6）

You are a university student in the US and you are interested in joining a creative writing summer course. You find a website for such a course.

Join YCW's fifth annual intensive creative writing course. Stay with other young writers in the camp and learn from published writers and artists.

One Week Intensive Course

Dates：August 20th to 27th 2023
Location：Camp YCW, Lake Washington, Seattle
Course Price：$750 – accommodation and food provided (bring cash to use in the camp store)
Optional Activities：hiking, lake cruise

Courses Available

◆ **Shakespeare Course**：You will analyze two Shakespeare plays with the help of an award-winning screenwriter. You will also work in small groups to write a short play which will be performed on the final morning of the course in front of your campmates.

◆ **Bronte Course**：Karen Nelson, a published novelist, will lead this course. She will teach you the basics of writing, techniques for storytelling, and how to get your work published. Your short stories will be made into a book, which you will receive in the mail a week after the course.

◆ **Lee Course**：Named after Stan Lee, the creator of some of the world's most famous comics, this course will teach you the basics of comic writing. You will also learn about Japanese manga from published manga artist Kana Kagawa. Your work will be shown as a slide presentation to your campmates on the final evening.

▲ **How to Apply**

1. Complete the **online application form** by June 7th, 2023. Please state your preferred course.

2. You will receive email confirmation of your place after June 8th.

*Please note that places are limited to 20 students for each course. If too many students apply for one course, places will be given at random. Students who do not get their preferred course may cancel their application or join a less popular course.

問 1　All camp instructors are $\boxed{1}$.

① experts whose work has been published or highly evaluated
② knowledgeable about the Japanese language
③ qualified teachers of literature
④ writers who have been awarded a prize for their novels

問 2　On the last morning of the camp, campers will $\boxed{2}$.

① enjoy a slide presentation of Japanese manga
② go fishing in Lake Washington
③ read a book created by the Bronte Course students
④ watch a play written during the camp

問 3　What will happen if a course is too popular? $\boxed{3}$

① Each student will have an equal chance of being chosen.
② Each student's writing skills will be checked.
③ Students who applied earlier will be chosen.
④ Students will have to take a placement test.

第2問 （配点 12）

You are a member of your school's student council. You and the other members have been discussing how to help the younger students in the school become more active. To get ideas, you are reading an article about a school fitness program a school in the US started.

Walk-to-School Project

Studies have shown that the activity levels of school students are dropping each year. In addition, fewer students are walking or cycling to school than in previous years. This lack of exercise means that students are becoming unhealthy and overweight.

Although many parents want their children to walk to and from school, they are worried about safety. For that reason, they drive their children to school or put them on a school bus, even though they live within walking distance of school.

Our school started the Walk-to-School project on November 1st on a trial basis. We had a group of students living in the same neighborhood walk to school together with adult supervisors. Three walking routes were organized, with two adult volunteers per route. Seventy-five students from grades 1 and 2 participated in the beginning, but only 60 students were using the Walk-to-School program by the start of the winter vacation in December. Let's look at feedback from students and parents to find out why.

Student/Parent Feedback

M.M. Thanks to this project, many students, including my daughter, have made new friends from different classes. They have also begun to enjoy exercise more. I consider it a success.

K.J. I enjoyed the walking in the beginning, but I didn't like it on rainy days. It rains a lot in winter so I'm thinking of taking the bus on rainy days.

R.B. A few weeks after the project began, both volunteers on my son's route had to retire for family reasons. I didn't trust the students to walk to school by themselves so I started driving my son to school again, as did other parents.

V.K. My friend wanted to join too but she lives in an area not covered by the project. I wish she could join too.

W.L. I love the Walk-to-School project because I can talk to my friends before school and it motivates me to get up early and leave the house on time.

問1　The aim of the Walk-to-School Project was to ☐4☐ .

① allow parents free time in the morning

② cut transportation costs for parents

③ give students the chance to exercise

④ help students get to school on time

問2　One **fact** about the Walk-to-School Project is that ☐5☐ .

① every student participated

② fifteen students quit the project

③ it is a permanent project

④ it was canceled on rainy days

問3　One of the opinions about the Walk-to-School Project is that ☐6☐ .

① it helped many students to get to know other students

② it started too early in the morning

③ it was faster than taking the bus

④ parents started to trust their children more

問4　The author's question was answered by ☐7☐ .

① K.J.

② M.M.

③ R.B.

④ V.K.

⑤ W.L.

第3問 （配点 9）

You share an apartment with other exchange students. Your kitchen is messy, so you have decided to clean and organize it. You read the following article written by an expert home organizer.

Maximizing Kitchen Efficiency

When I first returned to work after having my children, I realized that I needed to make my life as organized and efficient as possible, to stay on schedule, and to maximize the time I could spend with my children. I noticed that so much of my time involved preparing food, so I decided to organize my kitchen first. Here is how I succeeded in making my kitchen easier to use, and decreasing the amount of time I spent cooking and tidying up.

The first step to organizing a kitchen is to get rid of clutter. I decided that any items such as plates, dishes or pans that I hadn't used for a year could be sold, recycled, or thrown away. This freed up a lot of storage space. Next, I put all the equipment I use most often near the places I use it. For example, frying pans that I use daily I put in the shelves to the right of the cooker. As a right-handed person, this means I can easily pull the pans out with my right hand and use them on the cooker immediately. Coffee cups were placed next to the coffee machine, while storage containers were put on the shelf above the fridge.

After that, I focused on food. Sometimes when food is in boxes or packages, it is difficult to see how much is left. I often felt disappointed when I realized a package was almost empty and I had forgotten to buy a replacement. To solve that problem, I bought clear glass jars for items such as cereal, flour, pasta, and sugar so that I can easily see how much is left. Now, I use my smartphone to take a photo of my shelves before I go to the store so that I can easily check what I need to buy.

Finally, I made a virtual library of my favorite recipes. I often wrote down good meal ideas on scraps of paper or in notepads, but this not only created a pile of paper, it also made it difficult to find what I wanted quickly. Instead, I photographed all my recipes and stored them on my tablet. I threw away all the old paper and now everything is available at the touch of a button. I can even e-mail them to my husband when it's his turn to cook!

問1　Put the following events (① ～ ④) into the order they happened.

$$\boxed{8} \rightarrow \boxed{9} \rightarrow \boxed{10} \rightarrow \boxed{11}$$

① The writer changed the location of her utensils.

② The writer created digital copies of her recipes.

③ The writer disposed of unused equipment.

④ The writer purchased transparent containers.

問2　If you follow the writer's advice to create an efficient kitchen, you should $\boxed{12}$.

① avoid throwing away items that are rarely used

② make sure items are stored in logical locations

③ use things for a year before getting rid of them

④ wait until food has run out before buying it

問3　From this article, you understand that the writer 　13　 .

① spends less money on groceries than before

② wants her husband to do more cooking

③ wastes less time in the kitchen these days

④ would like her children to help with housework

英語（リーディング）の試験問題は次に続く。

第4問　（配点　12）

In English class you are writing about a social issue you are interested in. This is your most recent draft. You are now working on revisions based on comments from your teacher.

The Benefits of Playing Computer Games	Comments
Video games have a bad reputation among parents and teachers. They often believe that video games have no benefits at all and are a bad influence on a child's studies and social life. (1)∧ Some studies show that there are multiple benefits to game playing for young people.	(1) Add a linking sentence to introduce the main topic of the essay.
First, research by psychologists has shown that playing certain types of video games improves the thinking skills of the players. These thinking skills include navigation skills, memory, and reasoning. This is particularly true for shooting games, which involve a player finding and shooting targets while trying to avoid being attacked. In fact, gamers polish these skills just as much by playing video games as they would on a real-life course designed to teach these skills.	
Second, a long-term study has found that games may develop problem-solving skills. Role-playing games are especially good for developing this skill. The study found that the longer a student plays role-playing video games, the greater the improvement in school grades the following year. In short, playing role-playing games can (2) improve school grades.	(2) Avoid words you used in the previous sentences and try to use a different phrase.
(3)∧ Games that are short and easy to play can encourage relaxation and make the player feel happier than before. Put simply, playing video games can make young people feel good. This is important in a society where depression and mental health problems are becoming more common.	(3) Insert the topic sentence for this paragraph.
In summary, video games have many positive points. (4)∧ Of course, there are negative points as well, but if people use games in moderation, they can benefit them in many ways.	(4) Summarize those positive points here.

Teacher's Comment

Very interesting! Maybe I should play video games to make myself smarter! ^^

問1　Based on comment (1), which is the most appropriate linking sentence to add?　 14

① Actually, this is probably correct.
② However, this is not always the case.
③ In fact, most studies support this.
④ In short, this is not supported at all.

問2　Based on comment (2), which is the most appropriate phrase to use instead?　 15

① cause school performance to decline
② lead to higher academic results
③ make students do more school work
④ result in a drop in achievement

問3　Which is the most appropriate topic sentence to add based on comment (3) ?　16

    ① Finally, it is better for a person's mood and mental health to play long and difficult video games.

    ② Finally, playing video games has little effect in either direction on a person's happiness or moods.

    ③ Finally, the longer a person plays video games, the more their mental health is negatively affected.

    ④ Finally, video games help to improve a person's moods and prevent them from feeling anxious.

問4　Which sentence should you add, based on comment (4) ?　17

    ① They develop a person's ability to design, work hard, and socialize with other young people.

    ② They improve cognitive ability, polish solution-finding skills, and make a person feel good.

    ③ They protect a person's mind, and their ability to study, and increase depression.

    ④ They refine the shooting skills of the players, their ability to concentrate, and their energy levels.

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英語（リーディング）の試験問題は次に続く。

第5問 （配点　16）

You have decided to volunteer as an assistant Japanese language teacher in Australia next year. To prepare, you are reading two articles about language teaching techniques.

Task-Based Learning
K. Matsui
English Teacher, Iwahashi High School

When I was a high school student many years ago in Japan, all my classes were taught using the "grammar-translation method." In fact, even when I became an English teacher myself, that was the method I used. I taught my students an English grammar rule and its meaning in Japanese, then we practiced translating Japanese into English using this rule. The students learned grammar in great detail, and they were able to pass their exams. It was boring but effective.

However, when I took a break from my career and studied at a language school in Australia, I realized there was another way to learn a language. My teacher used "task-based learning." This means that instead of focusing on a grammar rule, we were given a task to complete in English, then we looked at the language after we had finished the task. For example, we were given the task of planning a travel schedule for a friend. We had to research accommodations and activities, role-play calling a hotel to make a reservation, then write an email to a friend. During this task we used reading, writing, speaking and listening skills, and practiced language without feeling it was "work." When the project or "task" was over, our teacher gave us advice about our English without using any Japanese at all.

I decided to use this technique more when I returned to Japan. Now, as a high school teacher, I use task-based learning as much as I can in my English lessons. I have noticed that my students are more engaged and their ability to actually use the language they have learned has improved. I believe it is time that the old-fashioned grammar-translation method was retired. I also think that the use of Japanese by English teachers in the classroom should not be encouraged.

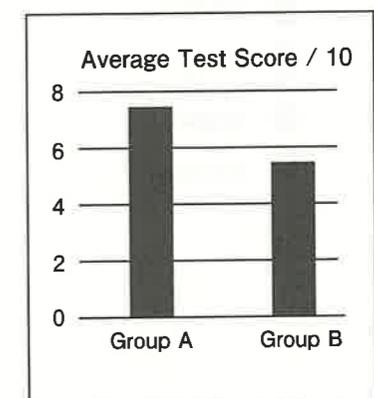### The Grammar-Translation Method
M. Suzuki
Researcher, Kanto Language University

I enjoyed reading Ms. Matsui's experience of task-based language learning, and I agree that it can be very beneficial to intermediate language learners. It encourages communication and allows the students to understand that language is a tool for everyday life.

However, I do not believe we should completely get rid of grammar translation as a method of language teaching, particularly when we teach beginners. For example, take a class of 12-year-old Japanese students. They have very limited exposure to English, so they know few words and even less grammar. It would be impossible for them to complete any kind of meaningful task in English. It would be even more difficult to explain the task to them in English because they would not understand the teacher's instructions. We need to give them the tools of vocabulary and grammar and explain it to them in language they understand while they are at the beginner stage.

In one study conducted at a school in Jordan, researchers compared test results of students taught an English grammar point in the source language (their native language: Arabic), with the results of students taught only in the target language (English). They randomly divided students into two groups of ten of equal academic ability. Group A was taught a specific grammar point using the grammar-translation method, with instructions in their native language. Group B was taught the same grammar point using just English and a number of example sentences. The two groups were then given the same grammar test. As you can see, there is a significant difference in the average test scores of the two groups.

Therefore, while I agree that task-based learning is a great teaching tool, we should not give up on grammar translation if we want our students to accurately learn how to read and write English and pass the all-important university entrance exams. I believe a good English course incorporates a number of different teaching techniques to give students a thorough understanding of the language and motivate them in a way that grammar translation does not.

Average Test Score / 10

問1　Matsui believes that ⬚18⬚ .

① grammar translation is ineffective in preparing for exams

② task-based learning is the best way to pass exams

③ teaching grammar is boring for English teachers

④ teaching in Japanese is not helpful for students

問2　In the study introduced by Suzuki, students were ⬚19⬚ .

① compared after being taught using different methods

② divided into two groups of different levels

③ not able to produce better results after the experiment

④ taught example sentences in their native language

問3　Suzuki explains that while task-based language learning is effective in improving intermediate students' ⬚20⬚ skills, grammar translation ensures that students learn the ⬚21⬚ language accurately, and is therefore an important method when teaching beginners. (Choose the best one for each box from options ① ～ ⑥.)

① communication

② job

③ source

④ study

⑤ target

⑥ writing

問4　Both writers agree that grammar translation is helpful for ⬚22⬚ .

① learning how to write creatively

② motivating intermediate students

③ scoring well in exams

④ seeing English as a tool

問5　Which additional information would be the best to further support Suzuki's argument? ⬚23⬚

① How to combine the task-based method and the grammar-translation method most successfully

② What makes grammar-translation learning more enjoyable for advanced students

③ Whether foreign language teachers should use their native language in class

④ Why task-based language learning is effective at the beginner stage

第6問 （配点 12）

Your science teacher has asked everyone to research an important woman in science and present your research to the class, using notes. You have found an article about Mileva Marić, Albert Einstein's first wife.

The Life of Mileva Marić

Everyone knows the name "Albert Einstein." He is considered the most important physicist of the 20th century, winning the Nobel Prize in Physics in 1921. However, few people know about his first wife, Serbian physicist Mileva Marić. She was associated with Einstein between 1896, when they first met, and 1919, when they divorced. It is believed by many that Mileva was the key to Einstein's success.

Mileva Marić was born in Serbia in 1875 to a wealthy family. All of her education before university was completed in her home country. At that time, only boys were allowed to attend physics lectures at her high school, but her father recognized her ability and obtained special permission for her to participate. In 1886, she entered Zurich Polytechnic in Switzerland, where she enrolled at the same time as Albert Einstein. She was the only woman in her course, which indicates she must have been very talented because opportunities for female scientists at that time were very limited. Mileva and Albert spent many years studying together. It is clear from the letters they exchanged at the time that she greatly influenced his studies. Mileva and Albert finished their classes with very similar grades, except in applied physics, where Mileva achieved much higher grades than Albert.

Albert's parents opposed his relationship with Mileva because of her nationality, her religion, and her high intellect. They believed she would not make a suitable wife for him. However, they continued their relationship and married in 1903.

Even before their marriage, the couple worked together on research. In 1900, they submitted their first research paper which was signed only by Albert. Despite this, both Mileva and Albert referred to it as "our article" in letters to each other and friends. Why did Mileva not add her name to the article? It is believed there are two main reasons. The first is that Mileva wanted Albert to make a name for himself so that his parents would allow him to marry her, and the second is that there was great prejudice against women at that time. By having their research published only in a man's name, it was more likely to be received positively.

1905 was Einstein's most productive year. He published five major articles in that year, one of which led to his Nobel Prize in 1921. Mileva mentioned to friends at the time that she and her husband would stay up late every night working on these papers. In addition, Einstein's biographer stated that Mileva was the one who checked the articles and sent them out while Einstein rested. Albert himself said to a friend, "I need my wife. She solves for me all my mathematical problems." Despite this, it was Albert who became the celebrated physicist while Mileva quietly worked in the background.

In 1912, Albert began a secret relationship with Elsa Lowenthal, his cousin. He also lived in different European cities during this time for work. This caused the collapse of his marriage to Mileva, and they divorced in 1919. Albert and Mileva were not on good terms after their divorce, and there is evidence that Albert's lawyers were worried that the truth of Mileva's input would be revealed after her death and the "Einstein myth" be destroyed.

Mileva Marić is just one of many female scientists in history whose work has been hidden. It is only recently that her influence on Einstein has been acknowledged. As with many women of her time, she abandoned her own wishes in order to support her husband's success. In fact, without Mileva Marić, Albert Einstein would probably not have become the household name he is today.

Your notes:

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┌─────────────────────────────────────────────────────┐
│                The Life of Mileva Marić               │
│                                                       │
│  About Mileva Marić                                   │
│  • Spent her youth in her home country of Serbia.     │
│  • Met Albert Einstein at university in Switzerland.  │
│  • Evidence of her talent in physics is that she was  │
│    the sole female admitted to her college course.    │
│                                                       │
│  Influential people in Mileva's life                  │
│  • Her father, who fought for her to study alongside  │
│    boys.                                              │
│  • Albert's parents, who opposed their marriage,      │
│    which probably caused her to  24  .                │
│                                                       │
│  Influential events                                   │
│  Enrolled at Zurich Polytechnic → 25 → 26 → 27 → 28   │
│                                                       │
│  Mileva and Albert's legacy                           │
│  Albert's lawyers were concerned that  29  .          │
│                                                       │
│  What we can learn from Mileva's story                │
│  •  30                                                │
│  •  31                                                │
└─────────────────────────────────────────────────────┘
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問1　Choose the best option for　24　.

① avoid writing her name on joint research papers

② complete her own research with no input from Albert

③ move to various European cities without Albert

④ stop helping Albert write his physics research papers

問2　Choose **four** out of the five events (① ～ ⑤) and rearrange them in the order they happened.　25　→　26　→　27　→　28

① Albert and his cousin started a secret romantic relationship.

② Albert got better grades than Mileva in applied physics.

③ Albert published the paper that led to his Nobel Prize.

④ Mileva and Albert finally became husband and wife.

⑤ Mileva and Albert finished and published their first article.

問3　Choose the best option for　29　.

① Mileva had not supported Albert as much as she had told friends

② Mileva would not get the recognition she deserved for her work

③ Mileva's contribution would become known, ruining Albert's reputation

④ papers the couples published together would not be found after her death

問4　Choose the best two options for ☐30☐ and ☐31☐ . (The order does not matter.)

① Albert would have been more successful without his parent's strong opposition.

② Einstein was a very important physicist, but his wife's influence may be greater than believed.

③ Mileva is an example of a female scientist whose work has not been fully recognized.

④ More Nobel Prizes should be awarded to female scientists than to male scientists.

⑤ Most of Albert Einstein's work was completed by his wife and not him.

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英語（リーディング）の試験問題は次に続く。

第7問 （配点 16）

You are in a student group preparing for a university biology presentation. You are using the following passage to create your part of the presentation on useful viruses.

When you think of viruses, you probably think of disease. After all, viruses are responsible for many of the illnesses that regularly affect humans. Influenza, the common cold, COVID-19, and countless other diseases are caused by viruses that specifically infect humans. For that reason, many people believe that all viruses are bad and must be avoided at all costs. However, that is not strictly true. There are many viruses that live inside us that are not responsible for disease at all. In fact, the opposite is true, because many viruses that live inside our digestive systems actually keep us healthy by killing harmful bacteria. Those viruses are called "bacteriophages," and they do not harm human cells at all. Moreover, scientists have also been researching other types of viruses that can kill cancer cells. These cancer-killing viruses have already been used to treat skin cancer in patients, and it is hoped that more treatment of this kind will be developed in the future.

The interesting thing about viruses is that they are not really "alive." They are not made out of cells, and they cannot make energy or reproduce by themselves. In simple terms, they are just a small piece of genetic material, such as DNA, surrounded by a protein case. Because viruses are very simple structures, they are very small. In fact, most viruses are 100-times smaller than a human cell. They are so small that they cannot be seen under a standard microscope. However, it's a virus's size and structure that allows it to bind to the outside of a host cell, insert its genetic instructions, then use the host cell's machinery to make copies of itself. The attack on a cell by a virus in this way usually results in the death of the host cell.

It is a virus's ability to kill a host cell that has allowed researchers to develop cancer treatments using viruses. In 2015, the first virus treatment for cancer was approved by the US government for use on patients. Scientists used a herpes virus, which usually causes mouth sores in humans. They modified the outer protein case of the virus so that it ignored healthy cells and attached itself to the outside of cancer cells. They also modified the genetic material of the virus so that it produced molecules called antigens that would attract human immune cells to the site of the cancer. Doctors could then inject these modified viruses into the site of the cancer every two weeks. The viruses would use the cancer cells to reproduce, killing the host cells in the process. The body's immune system would also attack the cancer cells itself. In this way, large skin cancer tumors have been destroyed.

There are many benefits of this treatment compared to standard medicine. First, there are fewer bad side effects because the virus only attacks cancer cells and leaves healthy cells alone. It is also a good way to treat skin tumors that cannot be removed by surgery. In addition, the viruses are injected directly into the tumor, so the treatment is targeted by location. This treatment is also easier for patients because it involves short visits to a doctor instead of long stays in hospital. On the other hand, there may be mild side effects such as fever and tiredness. In addition, this treatment cannot be used on patients with weak immune systems.

Currently, scientists are testing a similar treatment for patients with an eye disease that causes vision to gradually decline. Scientists have altered the genetic information in a virus so that it can deliver treatment to the eyes of patients with this disease to stop the vision loss. This treatment has been successful on laboratory mice, and it is hoped that it can be used in humans in the near future. However, one of the biggest challenges associated with this type of therapy is preventing the body's own immune system from identifying and killing the virus before it can deliver its important package to the cells that need it.

In summary, viruses can be used for good. They can be used to fight cancer and deliver important genes to the site of genetic disease. In the future, many other human diseases may be cured by specially adapted viruses.

Your presentation slides:

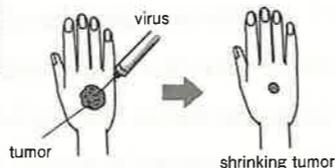|	
Good Viruses	**1. Basic Information** • Many diseases are caused by viruses • Many "good viruses" live inside us • • ⬚32 •

2. Skin Cancer Treatment

• modified herpes virus
• injected into tumor
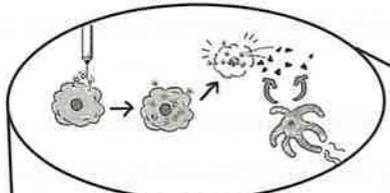• cancer cells killed
• patient immune system activated
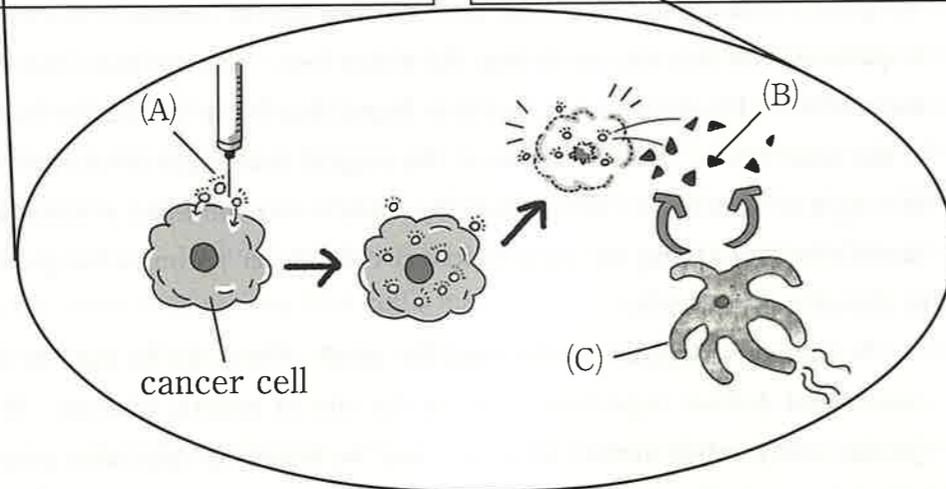
3. Benefits of This Treatment

• ⬚33
• ⬚34

virus

tumor → shrinking tumor

4. How the Treatment Works

⬚35

(A)

(B)

(C)

cancer cell

5. Final Statement

⬚36

問1　Which of the following should you **not** include for ⬚32 ?

① Help human cells reproduce quickly
② Most viruses are one-hundredth the size of a human cell
③ No reproduction without a host
④ Reproduction usually kills the host cell
⑤ Simple genetic material in a protein case

問2　For the **Benefits of This Treatment** slide, select two aspects of this treatment that are beneficial to the patient. (The order does not matter.)
⬚33 ・ ⬚34

① By using modified herpes viruses, the patient also becomes immune to future herpes infections.
② It is not so hard on the patient because it only requires short visits to a doctor.
③ It is usually used to make the removal of tumors by surgery much easier and faster.
④ The modified herpes viruses are adapted to attack only cancer cells, so healthy cells do not die.
⑤ This treatment causes no side effects, unlike cancer medicine which causes fever.

問3　Complete the missing labels on the illustration for the **How the Treatment Works** slide. ⬚35

① (A) antigens　　　　(B) immune cell
　 (C) modified virus
② (A) antigens　　　　(B) modified virus
　 (C) immune cell
③ (A) immune cell　　 (B) modified virus
　 (C) antigens
④ (A) modified virus　(B) antigens
　 (C) immune cell
⑤ (A) modified virus　(B) immune cell
　 (C) antigens

問4　Which is the best statement for the final slide?　36

①　Although many viruses cause disease, some are actually beneficial to humans.　Furthermore, some viruses can be adapted so that they target and kill unhealthy cells.

②　In the future, our knowledge of viruses will help us cure diseases such as cancer.　However, until this technology develops, viruses are dangerous to humans.

③　The number of viruses that cure diseases is greater than the number that cause them, so their negative reputation is no longer deserved.

④　Viruses that cause disease and illness have sometimes evolved to cure diseases such as cancer in humans.

問5　Why is the body's own immune system a barrier to the effectiveness of virus-based treatments?　37

①　The body's immune system may find the virus and kill it before it can treat the disease.

②　The human immune system is not good at reacting to viruses that enter the body.

③　Viruses cannot be recognized by the human immune system so the treatment is useless.

④　Viruses may cause the body's immune system to kill healthy cells instead of cancer cells.

（下 書 き 用 紙）

英語（リーディング）の試験問題は次に続く。

第8問　（配点　17）

You are working on an essay about whether self-driving cars should be permitted on roads. You will follow the steps below.

Step 1: Read and understand various viewpoints about self-driving cars.

Step 2: Take a position about whether or not self-driving cars should be allowed.

Step 3: Create an outline for an essay using additional sources.

[Step 1] Read various sources

Author A (Elderly person)

I'm excited about this new technology. As I get older, my reactions are getting worse, so it's too dangerous for me to drive a regular car now. However, if I had a self-driving car, I would be able to keep my independence for many more years. This technology will be very useful for disabled people, too. Anything that allows the elderly and disabled people to move around safely by themselves is a good thing. The only thing that worries me is how expensive these cars are!

Author B (Driving instructor)

I'm not worried about an increase in self-driving cars. Rather, my concern is that we will see more unsuitable drivers on the road. There are certain situations where a car will switch from self-driving to driver-operated, and we still need everyone to be sufficiently good at driving without artificial intelligence. On the other hand, this technology benefits people who can't drive normal cars now, such as senior citizens or people with disabilities. They will be able to stay independent for longer.

Author C (Car engineer)

As an engineer for a car company, I have no worries about the safety of self-driving vehicles. In fact, we specifically design these cars to be safer than human-operated cars. In my country, 85% of car accidents are caused by human error. If we can reduce this human error, we can save hundreds of lives every year. Of course, I worry a little about computer security, as there is always a chance that the vehicle's internal computer can get hacked, but I am confident that we have the skills and knowledge to deal with this quickly.

Author D (Police officer)

A lot of my daily work involves warning or arresting people for road offenses, such as speeding, drunk driving, or dangerous driving. I have heard that when this new technology becomes available, it may reduce traffic accidents. However, I don't believe this will actually happen, because there are so many things that can go wrong, causing more accidents. Overall, I don't think it is a good idea to bring this new technology in. The answer to the problems I mentioned is stricter driving tests and better laws.

Author E (Taxi driver)

I have been following this new technology with interest because I work as a taxi driver and my industry will be greatly impacted. I worry that not only private vehicles but also taxis and buses will eventually be replaced by driverless cars. Although the cars themselves will be more expensive than a regular car at first, they will start to become cheaper. At that point, transportation companies will decide that drivers are an unnecessary expense. I'm afraid taxi and bus drivers might not be able to work as we do now.

問1　Both Authors A and B mention that　38　.

① cars with this technology will become more expensive, so the elderly cannot use them

② families will be positively affected by self-driving cars because grandparents can help more

③ fewer people will take driving lessons because these new cars can drive themselves

④ self-driving cars will allow certain groups of people to become drivers and maintain independence

問2　Author C states that 39 .

①　although many people worry about the safety of these cars, they are no different to regular cars

②　by removing the need for human drivers, these new cars will help reduce the number of accidents

③　people will become better drivers with these new cars because the controls are much easier to operate

④　the cars are designed so that if there is the risk of an accident, the car switches to driver-operated mode

[Step 2] Take a position

問3　Now that you understand the various viewpoints, you have taken a position on the introduction of self-driving cars, and have written it out as below. Choose the best options to complete 40 — 42 . (You must have **all** of 40 — 42 correct to get points.)

> Your position: Self-driving cars should be allowed on the road.
> - Authors 40 and 41 support your position.
> - The main argument of the two authors: 42 .

Options for 40 and 41 (The order does not matter.)

①　A

②　B

③　C

④　D

⑤　E

Options for 42

①　Accidents will now be the responsibility of car manufacturers, rather than human drivers

②　Introducing self-driving technology will allow people to safely operate cars regardless of their driving skills

③　Self-driving cars are much less likely to get hacked by dangerous people than regular cars

④　The number of people who are arrested for drinking alcohol and driving will drop dramatically

[Step 3] Create an outline using Sources A and B

Outline of your essay:

> **Self-driving cars are the future**
>
> **Introduction**
>   In recent years, more car manufacturers are developing self-driving cars. Although many people are worried about this technology, they should be allowed on the roads.
>
> **Body**
>   Reason 1: [From Step 2]
>   Reason 2: [Based on Source A]　······　 43
>   Reason 3: [Based on Source B]　······　 44
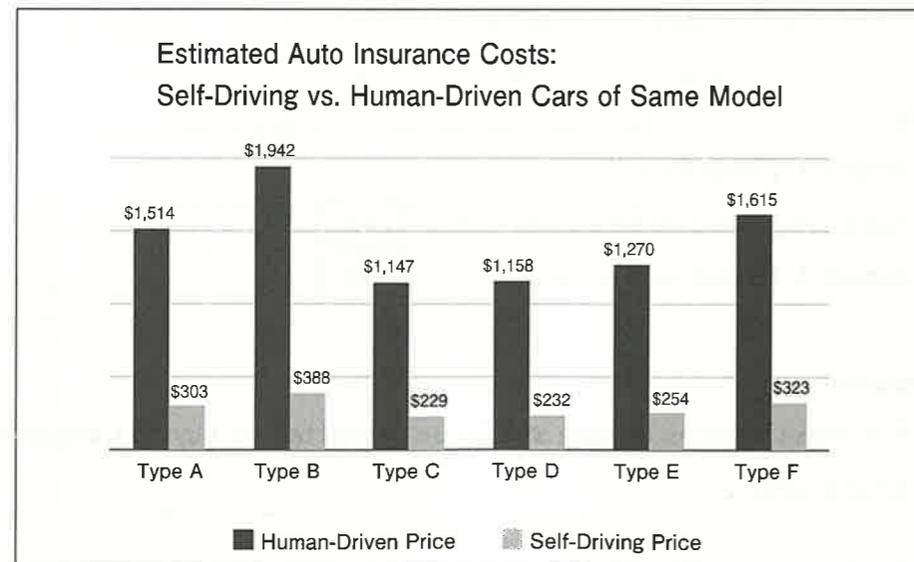>
> **Conclusion**
>   For these reasons, people should be permitted to buy and use self-driving cars.

Source A

Cars and vans currently account for about 10% of the world's carbon emissions. Therefore, it is very important that every step is taken to reduce this amount. One way to do this is by moving toward self-driving cars. Now, cars burn a large amount of energy when driven at high speeds, when braking, and when accelerating too quickly. Self-driving cars, on the other hand, are smart enough to optimize speed and acceleration to burn as little fuel as possible. They can also choose the most efficient route for journeys. In addition, if these cars eventually become completely driverless, households will need fewer vehicles because the same car can drive all the family members to work or school by itself, without needing lots of short journeys in different cars. Finally, as technology improves, the weight of the car will decrease, leading to even less burning of fuels. Now, batteries are heavy, but they are likely to get lighter over time.

Source B

A study by an insurance company in the US show that the amount we pay for insurance is likely to change if self-driving cars become more common. The calculations show the amount people pay currently for insurance for different types of car, compared to future estimates if the car becomes self-driving. This is because self-driving cars are less likely to have accidents.

Estimated Auto Insurance Costs:
Self-Driving vs. Human-Driven Cars of Same Model

	Type A	Type B	Type C	Type D	Type E	Type F
Human-Driven Price	$1,514	$1,942	$1,147	$1,158	$1,270	$1,615
Self-Driving Price	$303	$388	$229	$232	$254	$323

■ Human-Driven Price　▨ Self-Driving Price

問4　Based on Source A, which of the following is the most appropriate for Reason 2?　43

① Human-driven cars are about 10% more inefficient than self-driving cars.

② Newer self-driving cars have lighter batteries and brake faster than older ones, so they are more efficient to drive.

③ Self-driving cars can move faster for longer and have lighter batteries than human-driven cars, so they use less CO_2-emitting fuel.

④ Self-driving cars may be better for the environment because they are more fuel efficient and can cut down the number of car journeys.

問5　For Reason 3, you have decided to write, "Self-driving vehicles are likely to save people money". Based on Source B, which option best supports this statement?　44

① Around 50% of self-driving cars will have cheaper insurance than human-driven cars because they are cheaper to repair if they get damaged.

② Insurance costs for self-driving cars are half the price of human-driven cars due to changes in the car insurance industry.

③ More people will switch to smaller cars and self-driving cars because they are both cheaper to insure than regular ones.

④ Owners of self-driving cars may save around $1,000 each year in insurance costs because these cars are less likely to be involved in accidents.