

英 語

問題冊子 2

～ 注 意 ～

「問題冊子 2」に印刷されている問題は、2 から 3 までで、2 ページから 17 ページまであります。

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次の対話の文章を読んで、あとの各問に答えなさい。

(* 印の付いている単語・語句には、本文のあとに〔注〕がある。)

*Saki, Jack, Taro, and Jiro are high school students at Shibasaki High School. Jack is a student from Australia. Taro and Jiro are members of the science club. They are talking about their research topic in their classroom after school. The sky is turning orange. The *full moon has begun to rise in the east.*

Saki: Look! The full moon looks so beautiful in the clear sky.

Jack: Why don't we study about the moon?

Taro: That sounds exciting, but what kind of research are we going to do?

Jiro: Japan's *spacecraft landed on the moon around this time last year.

Taro: I remember Japan became the fifth country to send its spacecraft there.

Jack: Did it do anything new?

Jiro: It landed (1)-a than 100 meters away from its planned spot.

Jack: Was that good?

Jiro: It was the closest ever. It is really difficult for spacecraft to land on the right spot.

Saki: Where did Japan's spacecraft arrive on the moon?

Jiro: Around the middle of the rabbit's (1)-b ear.

Jack: The rabbit's ear?

Saki: Yeah, in Japan, we see the gray parts on the white moon as a rabbit.

Jack: That's not new to me, but it isn't easy to find where the ears are in Australia.

Saki: (2)-a

Jack: The rabbit's head is seen on the lower left side of the moon during this season.

Saki: Does it face a different direction?

Jack: Yes. I remember the rabbit is lying down on the moon.

Saki: Why does Jack see it that way?

Taro: I guess it depends on your country.

Taro takes out a handkerchief from his pocket. It has a world map on it. He puts it on the desk.

Saki: Japan is here, and Australia is there on this round planet.

Taro: People in Australia live below the *equator, so it means that they look up at the rabbit *from below.

Jack: I understand why the rabbit there is seen (3) like that.

Saki: Somehow it doesn't feel right to me.

Jack: Why do you feel that way?

Saki: I (4) 【① never ② why ③ the equator ④ people living ⑤ fall ⑥ the Earth ⑦ from ⑧ below ⑨ wonder】 into space.

Taro: Don't worry. Our planet has some *force to pull us down.

Jiro: Exactly. The force is called gravity.

Taro: Gravity allows us to stand anywhere on the Earth.

Jack: We know everything falls to the ground like an apple falling from a tree.

Saki: Wait a minute. The moon above us is not falling. (2)-b

Jiro: Actually, the moon is always falling *toward the Earth.

Saki: What? I cannot understand you at all.

Taro: Let's imagine we have a tennis ball here. What is the difference between the tennis ball and the moon?

Jack: First, the ball is so close to us, but the moon is so far away.

Saki: How far is it from here?

Jiro: It's about 380,000 km away from here.

Saki: It's so far away that it doesn't fall down, right?

Jiro: Yeah, but that's not enough.

Saki: Then, how about comparing the two speeds?

Taro: You have a good point.

Jiro: The fastest ball in a tennis match has a speed of about 260 *km/h.

Jack: The moon goes around the Earth about once a month.

Saki: How fast does the moon move?

Jiro: It moves at the speed of about 3,600 km/h.

Jack: It moves so fast that it never hits the Earth.

Saki: Can you explain why that happens?

Jack: (5)-a

Taro: (5)-b

Jack: (5)-c

Jiro: (5)-d

Jack: The moon is so far away from the Earth, and moves so fast around it that it never falls down.

Saki: I understand planets follow the same rule. Can I check that?

Jiro: Sure.

Saki: If the moon were moving *much more slowly, the Earth's gravity would pull it down to the Earth, right?

Jiro: That's right. If the moon were moving much (1)-c than now, what would happen to it?

Saki: It would escape the Earth's gravity and fly off.

Jiro: Perfect. If you were on the moon, you could also explain its condition like this. The moon is kept in *balance by both gravity and centrifugal force.

Jack: Centrifugal force? Give some examples.

Taro: Sure. If you *swing a bucket with water very fast over your head, does the water fall out of the bucket or stay in it?

Jack: It stays there.

Taro: Why?

Jack: Because the centrifugal force is (1)-d than the force of the gravity.

Taro: If you swing the bucket slowly, then what is your answer?

Jack: (2)-c

Everybody laughs.

Saki: You're certainly right.

Taro: But we wanted you to say the force of gravity is greater than the centrifugal force.

Jiro: Can anyone give another example?

Saki: When a roller coaster with a *360-degree loop turns you *upside down at the highest point, it holds you in your seats with that force.

Jiro: Good job. Roller coasters remind me of another *ride that is used for traveling into space.

Saki: What kind of ride?

Jiro: It moves like a *ropeway between the Earth and space.

Saki: A ropeway? I only think about rockets when I think of going into space. Does the ropeway use ropes in space?⁽⁶⁾

Jiro: Yes, they help to carry a ropeway car.

Saki: How will the ropeway be built?

Jiro: First, a big space station will be built at an *altitude of about 36,000 km above the Earth's equator.

Saki: Why does it need to stay there?

Jack: I know it is kept in balance by the two forces.

Jiro: Well done.

Taro: What will be created next?

Jiro: Then two ropes will be stretched from the station. One will come to the Earth side and the other will go into the space side.

Saki: Two ropes?

Jiro: Yes, the space ropeway won't run if it doesn't have them.

Taro: Why does it need two ropes? I think one rope to the Earth will be enough.

Jiro: The space station will fall down because of the Earth's gravity.

Taro: Oh, I forgot.

Saki: By the way, what is the meaning of the ride, Jiro?

Jiro: That's a good question. What have humans used to go into space?

Jack: Traveling into space always reminds me of rockets.

Saki: What is the difference between rockets and the space ropeway?

Taro: It is eco-friendly. Maybe, no CO₂?

Jiro: Right. It runs by using electricity produced by coming to the Earth at high speed.

(2)-d

Taro: Rockets have left a lot of parts in space as garbage.

Saki: A lot of broken *satellites are flying over the Earth.

Jack: Oh, I know they are called “space debris.”

Jiro: Space debris is moving much faster around the Earth than the moon.

Taro: It’s so scary.

Saki: If humans continue to send rockets and satellites into space, the amount of space debris will increase forever.

Jiro: The space ropeway will never leave space debris.

Taro: Everything seems fine, but ⁽⁸⁾I’m worried about the space environment around the space ropeway.

Saki: Of course, we need to protect it from dangerous things, but the most important thing about it is to be able to carry people like us into space with it.

Jack: Exactly.

Taro: It sounds good. If this plan could be realized, more people like us would have the experience of going into space.

Jiro: Like traveling abroad, I hope we can enjoy traveling into space.

〔注〕 full moon 満月

equator 赤道

force 力

～ km/h 時速～キロ

balance 均衡

360-degree loop 360 度回転

ride 乗り物

altitude 高度

spacecraft 宇宙船

from below 下から

toward ～ ～の方向へ

much はるかに

swing ～ ～を振り回す

upside down 上下逆さまに

ropeway ロープウェイ

satellite 衛星

〔問 1〕 (1)-a ～ (1)-d の中に英語を入れるとき, その組み合わせとして最も適切なものは, 次のア～カの中ではどれか。

	(1)-a	(1)-b	(1)-c	(1)-d
ア	less	smaller	faster	greater
イ	less	smaller	greater	faster
ウ	smaller	greater	less	faster
エ	smaller	greater	faster	less
オ	faster	less	smaller	greater
カ	faster	less	greater	smaller

〔問 2〕 (2)-a ～ (2)-d の中に, それぞれ次の A～D のどれを入れるのがよいか。その組み合わせとして最も適切なものは, 下のア～カの中ではどれか。

- A Anything else?
- B Why is that?
- C I'll get wet.
- D Why not?

	(2)-a	(2)-b	(2)-c	(2)-d
ア	B	A	C	D
イ	B	D	A	C
ウ	B	D	C	A
エ	D	A	B	C
オ	D	B	A	C
カ	D	C	B	A

〔問 3〕 ⁽³⁾ like that とあるが、この内容を最もよく表しているものは、次の中ではどれか。

ア



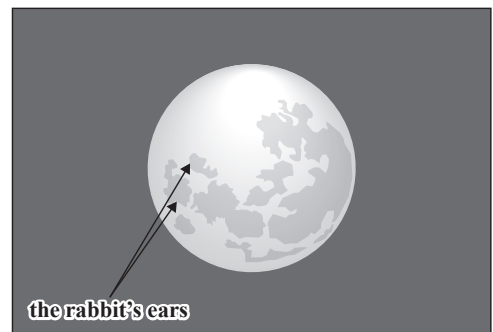
イ



ウ



エ



〔問 4〕 ⁽⁴⁾ 【 ① never ② why ③ the equator ④ people living ⑤ fall ⑥ the Earth ⑦ from ⑧ below ⑨ wonder 】について、本文の流れに合うように、【 】内の単語・語句を正しく並べかえるとき、【 】内で 1 番目と 6 番目と 9 番目にくるものの組み合わせとして最も適切なものは、次のア～カの中ではどれか。

	1 番目	6 番目	9 番目
ア	①	③	⑤
イ	①	⑥	③
ウ	⑤	①	⑦
エ	⑤	⑥	⑧
オ	⑨	①	⑥
カ	⑨	⑤	⑧

〔問 5〕 (5)-a ～ (5)-d の中に、それぞれ次の A ～ D のどれを入れるのが
よいか。その組み合わせとして最も適切なものは、下の ア ～ カ の中ではどれか。

- A Let's add "moves very fast around it" to Saki's words about the moon.
- B It moves so fast around the sun that it does not hit it.
- C That's also true for our blue planet going around the sun.
- D The Earth is so round that the moon never falls down.

	(5)-a	(5)-b	(5)-c	(5)-d
ア	A	B	C	D
イ	A	C	B	D
ウ	B	A	D	C
エ	B	D	A	C
オ	D	B	C	A
カ	D	C	B	A

〔問 6〕 (6) I only think about rockets when I think of going into space. とあるが、この
内容とほぼ同じ意味をもつ一文を本文中から探し、その **始めの 2 語** と **終わりの
2 語** を答えなさい。

〔問 7〕 (7) Oh, I forgot. とあるが、この内容を最もよく表しているものは、次の中では
どれか。

- ア Taro forgot why the space ropeway would be built instead of rockets.
- イ Taro forgot why the space ropeway would be able to stay in space.
- ウ Taro forgot to tell Jiro that the space ropeway would be eco-friendly.
- エ Taro forgot the space ropeway could carry more people like his friends.

〔問 8〕 ⁽⁸⁾ I'm worried about the space environment around the space ropeway とあるが、その理由は何か。文脈から推測し、次の下線部に 15 語以上 20 語以内の英語を入れ、一文を完成させなさい。本文中の単語や表現を用いても構わない。

なお、「,」「:」「;」などは、語数には含めない。これらの符号は、解答用紙の下線部と下線部の間に入れなさい。

I'm worried about the space environment around the space ropeway because

〔問 9〕 本文の内容に合う英文の組み合わせとして最も適切なものは、下のア～シの中ではどれか。

- ① Taro says Japan's fifth spacecraft landed on the moon this year as it planned.
- ② Jack doesn't know about the rabbit on the moon at all until Saki talks to him about it.
- ③ Taro tries to explain what the Earth is like with his handkerchief and a real tennis ball.
- ④ Saki already knows what the gravity is like on the Earth before Jiro explains it.
- ⑤ After asking questions about the moon, Saki learns why it moves around the Earth.
- ⑥ Jiro explains what centrifugal force is like on the Earth without asking for an example.
- ⑦ The space ropeway is designed to be able to stay in space with only one rope.
- ⑧ Saki, Jack, Taro, and Jiro think that traveling into space with a space ropeway is a good idea.

ア	② ④	イ	② ⑥	ウ	③ ⑦
エ	⑤ ⑧	オ	① ② ④	カ	① ③ ⑤
キ	① ③ ⑥	ク	④ ⑤ ⑥	ケ	④ ⑦ ⑧
コ	① ⑤ ⑥ ⑦	サ	② ③ ⑦ ⑧	シ	⑤ ⑥ ⑦ ⑧

3 次の文章を読んで、あとの各問に答えなさい。

(＊印の付いている単語・語句には、本文のあとに〔注〕がある。)

*Emily is a second-year student at Nishiki High School. She is an *exchange student from Canada and has lived with her host family since this September. There are three in her host family: the father Masaru, the mother Yukiko, and their daughter Takako.*

It was almost November, and Emily was with Takako after dinner at home. They were talking about ⁽¹⁾the homework their English teacher gave them that day. The English lesson was about climate change. According to surveys, scientists have been finding out about changes in the Earth's climate everywhere. The changes are (2)-a serious problems in nature and damaging the lives of people around the world. Emily learned one example: summer in the US is becoming hotter, longer, and more dangerous. The teacher gave a research project as homework at the end of the class. Each group would decide one topic about climate change in the world, do research, and then give a presentation. They would have two weeks to prepare. Emily decided to do it with Takako.

“How do we select our research topic?” Emily asked Takako. At that moment, Masaru came back home. He smiled at them after Emily talked about their homework, “How about talking with my friend, Bruce? Climate change has been (2)-b grapes.”

Masaru told Emily about Bruce before. Bruce is his friend from college days in California, the US, and he *owns a *vineyard in Nishiki City. Masaru came back to Nishiki City after graduating and sent an e-mail to Bruce in California. He also sent pictures of some vineyards there with the e-mail. Bruce became interested in them because his parents own a vineyard in California. He worked there with his sisters. Masaru continued, “One day Bruce came to Japan to visit me, and I showed him some vineyards in the city. He told me that his parents' vineyard has hotter summers and warmer winters. It was getting more difficult to grow the grapes he wanted to grow, so he was looking for a cooler place to start his vineyard. He moved here five years ago.”

Nishiki City is in the north of Japan, and Emily heard that there's a lot of snow in winter. She thought it's so cold that the farmers cannot grow fine grapes. Takako looked at Emily, “Why don't we go to Bruce's vineyard? Dad, can you take us? We want to ask him because of our homework.” Masaru answered, “Sure! Actually, I'm going to visit him this weekend. It's the busy season for grape *growers, so he asks us to help every year. Takako, you did the work last year. Teach Emily how to do it.”

The next weekend, they visited Bruce's vineyard. He welcomed and invited them to his house near his vineyard. Emily *shook hands with him, “Hello, I'm Emily. I'm from Canada. I'd like to help you with your job.” Bruce explained to her, “This job is called ⁽³⁾pruning. Pruning means cutting *branches from trees. Main, strong, and thick branches are kept, and other thinner branches are removed. I ask Masaru's family to (4) every year.” “Bruce, they have a research project. I believe that you can help them,” Masaru said. Emily and Takako

explained it and asked Bruce to tell the reason, “What brought you to Nishiki City?” He started thinking of some answers.

First, Bruce was attracted by the natural beauty when he visited Nishiki City for the first time. It reminded him of his parents’ vineyard surrounded by mountains near the sea. He visited some vineyards in the city and heard that nice grapes are produced thanks to the climate change. One day he had a chance to meet a *geologist and asked for a *soil survey. According to the survey, ⁽⁵⁾ 【 ① is ② to ③ of ④ for ⑤ Bruce ⑥ wanted ⑦ the type ⑧ good ⑨ grape ⑩ the soil 】 produce. So, he decided to have his vineyard in the city.

However, to Bruce, this was not the answer Emily and Takako were looking for. He started answering another reason first. “Well, the first reason is the climate here,” he answered. “Lots of countries are (2)-c huge problems as you learned at school. It’s getting so hot that grapes are damaged in some countries. Many growers decide to pick grapes earlier than before. Some growers are moving to cooler places or find other types of grapes that can survive in such severe conditions. The climate here is perfect for me!” Emily wondered, “I heard that this city is about 5 *degrees Celsius warmer than a century ago, but it still seems cold. Grapes need hot days and *sunlight in the long growing season, right?” Bruce smiled, “That’s true. The sun is important for making great grapes, of course. Grapes need some sunlight and warm climate during the day, to grow and provide the energy needed to produce *sugar in them.” He looked at both Takako and Emily and asked, “Please imagine that after playing outside on a hot day you’re really tired at night. Do you want a hot night?” They shook their heads to say no. Cold nights act almost like a refrigerator to keep grapes fresh. “If it’s too hot all day, the grapes will be too sweet like jam,” he laughed.

Bruce brought a piece of paper to explain another reason. “Can I show you something interesting, though it is not about climate change?” He drew a sea on the left, a vineyard on the right, and a mountain between them. Takako noticed that the vineyard looked like Nishiki City. He *pointed at one spot, “This is my parents’ vineyard.” He added wind from the sea going up the mountain, and another one from the top down to the vineyard. Bruce passed Emily and Takako pencils and asked them to draw some clouds and rain. Emily drew some clouds near the top of the mountain, and then Takako added rain falling from them. “That’s right. Cool and wet air coming from the sea will become clouds around the top of the mountain, and drop rain or snow. After the air crosses over the top and starts coming down the other side, the air warms up with dry air. Dry and warm air with some rain is necessary for fine grapes. We call this warm and dry area ⁽⁶⁾ a Rain Shadow.” Emily pointed at the spot, “So, here is Nishiki City, right? Now I understand the second reason.”

They went to the vineyard. Bruce taught Emily how to choose and cut thinner branches. Takako also showed Emily the way to cut them with special tools. Bruce explained while pruning next to Emily, “Pruning doesn’t get a lot of attention, but it’s an important part of making fine grapes. Without pruning, trees will produce too many grapes, and cause lower grape quality and sugar levels.” “By (2)-d leaves, grapes will get enough sunlight that they need, too,” Takako added. “Well, does pruning damage the trees?” Emily asked him.

“It doesn’t because trees sleep during winter. The growers here usually start pruning in November just before the winter comes,” Bruce answered. They finish pruning before the trees are covered with snow. ア

That evening, after coming back home, Emily and Takako were making dinner. Yukiko just returned from work. “I wanted to go with you today. Emily, Takako, did you have a good day?” asked Yukiko. Takako turned to Yukiko, “Mom, we did! At dinner, we’ll tell you the things we learned today.” イ Emily and Takako thought climate change is something happening far away when they learned about it at school. ウ They were making two kinds of sandwiches. One was with the grape jam Bruce gave them that day, and the other was with the one they usually eat. The jam from Bruce was made from the grapes he grew. The grapes are sweeter than grapes usually eaten, because they include a lot of sugar thanks to pruning. エ Everyone would enjoy the difference in the dinner.

〔注〕 exchange student 交換留学生

vineyard ブドウ畑

shake hands with ～ ～と握手をする

geologist 地質学者

degree Celsius セ氏温度 (°C)

sugar 糖分

own ～ ～を所有する

grower 生産者

branch 枝

soil 土壌

sunlight 日光

point at ～ ～を指さす

〔問 1〕 ⁽¹⁾the homework とあるが、本文の内容に合う英文の組み合わせとして最も適切なものは、下のア～シの中ではどれか。

- ① The English teacher talked about the homework at the beginning of the class.
- ② Every group in the English class would decide their own topic to do research and then give a presentation.
- ③ The presentation topic would be about climate change happening these days, and it would be only about Japan.
- ④ The students in the English class would give a presentation two weeks later, and they would prepare for it.
- ⑤ The English teacher would decide who would be the members in each group later, and then the students would start working.
- ⑥ Emily decided her research topic at the end of the class and talked about it with Takako.
- ⑦ Masaru recommended Emily and Takako to talk with his friend Bruce for the homework, and they decided to do so.

ア	① ④	イ	① ⑤	ウ	① ⑦
エ	③ ⑦	オ	① ③ ⑤	カ	② ④ ⑥
キ	② ④ ⑦	ク	③ ④ ⑥	ケ	① ② ④ ⑥
コ	① ③ ⑤ ⑦	サ	② ④ ⑤ ⑥	シ	③ ④ ⑤ ⑦

〔問 2〕 (2)-a ～ (2)-d の中に、それぞれ次の A～G のどれを入れるのがよいか。その組み合わせとして最も適切なものは、下のア～カの中ではどれか。

A affecting B decreasing C allowing D causing
E removing F creating G facing

	(2)-a	(2)-b	(2)-c	(2)-d
ア	A	B	C	F
イ	A	E	D	B
ウ	D	A	G	E
エ	D	B	G	F
オ	F	A	D	E
カ	F	E	C	B

〔問 3〕 ⁽³⁾pruning とあるが、本文の内容と一致しないものは、次の中ではどれか。

- ア Pruning is to remove thick branches from the trees with special tools.
- イ Pruning has not been getting much attention, but it's a necessary process.
- ウ If growers don't prune trees, the grapes will have lower sugar levels.
- エ The good time to prune grape trees is just before winter.

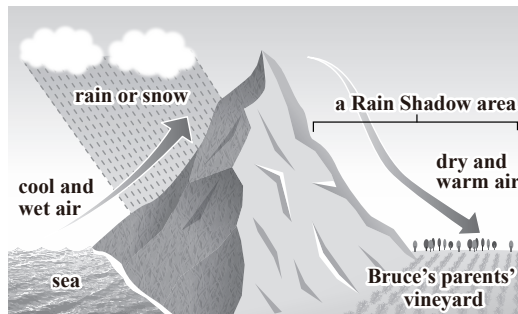
〔問 4〕 本文の流れに合うように、(4) の中に入る同じ段落中の最も適切な英語 1 語を書き抜きなさい。

〔問 5〕 ⁽⁵⁾【 ① is ② to ③ of ④ for ⑤ Bruce ⑥ wanted ⑦ the type ⑧ good ⑨ grape ⑩ the soil 】について、本文の流れに合うように、【 】内の単語・語句を正しく並べかえるとき、【 】内で 1 番目と 4 番目と 9 番目にくるものの組み合わせとして最も適切なものは、次のア～カの中ではどれか。

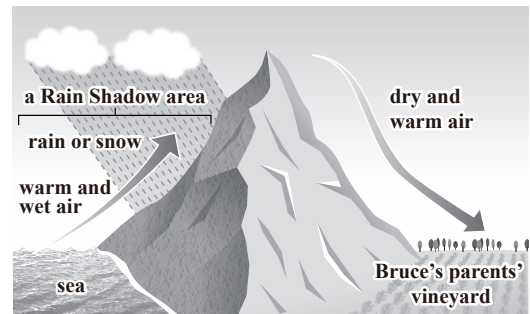
	1 番目	4 番目	9 番目
ア	⑤	③	①
イ	⑤	④	①
ウ	⑦	⑤	⑧
エ	⑦	⑨	③
オ	⑩	④	⑥
カ	⑩	⑧	⑦

〔問 6〕 ⁽⁶⁾ a Rain Shadow について、Bruce が説明した内容に最も近い絵は、次の中ではどれか。

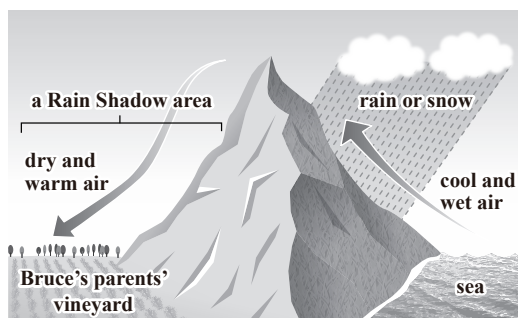
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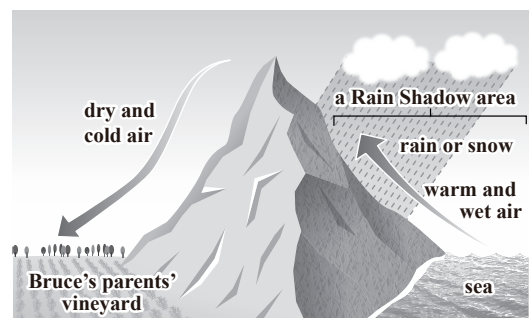
イ



ウ



エ



〔問 7〕 次の英文は、 ～ のいずれかに入る。この英文を入れるのに最も適切な場所を選びなさい。

However, they realized the problem is something close to themselves, and they should think about it more.

〔問 8〕 本文の内容に合う英文の組み合わせとして最も適切なものは、下のア～シの中ではどれか。

- ① Masaru and Bruce went to the same college in California, and they came back to Nishiki City together just after they graduated.
- ② It was difficult for Bruce to grow the grapes he wanted to make in his parents' vineyard, so he looked for the place for his own vineyard.
- ③ When Bruce visited Nishiki City for the first time he became interested in the nature, and then he remembered his parents' vineyard in Canada.
- ④ Grape growers in Nishiki City can produce nice grapes because of the climate change, and that was the only reason for Bruce to have his own vineyard there.
- ⑤ Before Emily talked with Bruce, she thought it's not warm enough to grow good grapes in Nishiki City, though it's getting warmer.
- ⑥ To grow a lot of grapes and make them sweet enough, hot air is always necessary from morning to midnight.
- ⑦ The vineyard Bruce drew on the piece of paper looked like Nishiki City to Takako, but Emily didn't think so.
- ⑧ Emily and Takako were using two different types of jam for dinner, and one of them was the jam that Bruce gave them that day.

ア	① ③	イ	② ⑥	ウ	④ ⑧
エ	⑤ ⑦	オ	① ② ⑥	カ	② ③ ⑧
キ	② ⑤ ⑧	ク	③ ⑤ ⑦	ケ	① ② ④ ⑥
コ	③ ④ ⑤ ⑧	サ	③ ④ ⑥ ⑦	シ	④ ⑥ ⑦ ⑧

〔問 9〕 次の英文は、Emily と Takako が、Bruce から学んだことに基づいて作成したプレゼンテーションの原稿の一部である。本文の内容を踏まえて、下のプレゼンテーションの原稿の下線部に **15 語以上 20 語以内の英語**を入れ、一文を完成させなさい。本文中の単語や表現を用いても構わない。

なお、「,」「:」「;」などは、語数には含めない。これらの符号は、解答用紙の下線部と下線部の間に入れなさい。

Hi, everyone. Do you think the life of grape growers is changing? The answer is “Yes.” Grapes _____. This is happening because of climate change.

Today we’re talking about grapes. Here is an example. Our example is Bruce. We talked with Bruce, a grape grower in Nishiki City, and we learned a lot! First, I’ll talk about the things happening to grape growers in the world. Next, Emily will talk about Bruce’s life.

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