2023(令和5)年度

1日 [60分] *

外 国 語 (英 語)

注 意

- 1. 監督者の指示があるまで問題を見ないこと。
- 2. 声を出して問題を読まないこと。
- 3. 問題は29ページ、1 から 5 まである。
- 問題や解答用紙に落丁、乱丁、汚損あるいは印刷不鮮明の箇所があれば、
 手をあげて監督者に申し出ること。
- 5. 解答は必ず黒色鉛筆を使用し、解答用紙に記入すること。
- 6. 解答は解答用紙の解答欄の記号にマークすること。
- 7. 訂正箇所は、消しゴムできれいに消すこと。
- 8. 解答欄には、関係のない符号や文字あるいはメモなどを記入しないこと。
- 9. 解答用紙を折ったり汚したりしないこと。
- 10. 問題用紙は持ち帰ること。

- 1 意味の通る文法的に正しい文を完成させるのにもっとも適切なものを選びなさ い。[各1点]
 - 1. I believe my wife will always () by me even when things are not going well.
 - A. set B. stand C. supply D. support

2. A: I don't know whether I should take that Chinese course or not.
B: If I () you, I'd take it.
A. am B. had been C. were D. will be

- 3. Let the players begin the cricket game, () they will not be able to finish it today.
 - A. after B. therefore C. or D. then

4. I like everything about the new music and think it () be any better.

A. may not	В.	couldn't
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C. must not D. shouldn't

5. After Thomas () his job offer, Mr. Evans decided to offer the position to Peter.

- A. is rejecting B. had rejected
- C. having rejected D. was rejected

6. You can purchase the latest print edition or () to the online version.

A. subscribe B. describe C. prescribe D. inscribe

- 7. John led me into the room and stood close to me, so close that our faces were () touching.
 - A. always B. already C. abruptly D. almost
- 8. Nana sounded crueler than (), but we all knew she was not. A. never B. forever C. soon D. ever
- 9. In () of the rain, a lot of people enjoyed watching the parade along its route.
 - A. favor B. spite C. light D. place
- 10. I would appreciate any () information, as this is a very serious matter for me.

A. temporary B. exceeding C. standard D. relevant

11. () what is rumored, our company is not that bad.

- A. But for B. Owing to
- C. Contrary to D. In addition to
- 12. In both () and casual emails, it's important to be brief, warm and to the point.
 - A. friendly B. correct C. lengthy D. formal
- 13. We seem to () their trust. I hope we can regain it.
 A. lose B. have lost
 C. be lost in D. have been lost

14. Immediate funding is needed	for the people living () of			
starvation.				
A. at the expense	B. for the good			
C. on the side	D. on the edge			
15. We need to make much more effort to keep peace, ($\hfill \hfill \h$				
is over.				
A. considering that	B. not provided that			
C. except that	D. to the effect that			
16. All events will take place at the	end of September () weather			
conditions.				
A. by means of	B. instead of			
C. regardless of	D. in case of			
17. It is often said ($\hfill \hfill \hfil$				
representation of the subject.				
A. fair B. abstract	C. still D. landscape			
18. It was ($\hfill)$ for me to have	the lowest test scores among my			
friends.				
A. proficient	B. efficient			
C. embarrassing	D. encouraging			
19. He moved up the $($ $)$ and be	ecame head of a local organization.			
A. ladder B. scale	C. pole D. direction			

- 20. No ($\$) person would purchase the car if they knew about its problems.
 - A. thoughtless B. improper C. invalid D. reasonable

- 2 語句を並べ替えてもっとも自然な英文を完成させ、2番目と5番目に入れるものの記号を書きなさい。ただし、文頭に来る語も小文字にしてある。[各2点]
 - 1. I will not pay (1)(2)(3)(4)(5)(6) this machine by the time I come back. A. you B. have C. repaired D. fee E. unless F. the 2. The boy wants (1)(2)(3) him a box (4)(5)(6) toy inside. A. buy B. to C. of candies D. his mother E. a small F. with 3. The impact of a report (1)(2)) (3) not (4) by the addition of well-located illustrations, (5)(6) by the overall layout of the document. A. also B. but C. improved D. merely E. will F. be 4. The reporter (1)(2)(3)(4)(5)(6) the skiing accident. C. she A. had witnessed B. interviewed D. thought E. the people F. who 5. Please lend (1)(2)(3)(4)(5)(6) with it. A. me B. through C. are D. you E. that hair dryer F. when

6. She wants (1)(2)(3)(4) the drug because her father is (5)(6) Alzheimer's disease. B. working A. from C. continue F. to D. suffering E. on 7. Rebecca said nothing and just (1)(2)(3)(4)(5)(6) folded over her chest. C. me A. arms B. her D. at E. with F. stared 8. Teenagers are more $\begin{pmatrix} 1 \end{pmatrix}\begin{pmatrix} 2 \end{pmatrix}\begin{pmatrix} 3 \end{pmatrix}\begin{pmatrix} 4 \end{pmatrix}$ and seek adventure (5)(6) are. A. risks C. take B. to D. adults F. apt E. than 9. (1)(2)(3), Japan (4)(5)(6) a safe country where very few crimes are committed. A. to B. overseas C. be D. seen E. appears F. from 10. You (1)(2)(3)(4)(5)(6) at the city hall. A. seminar B. attended C. have D. to E. ought F. yesterday's

3 次の文章を筋の通ったものにするために、枠内にあるA~Dからもっとも適切 なものを選び()の中に入れなさい。(*印の語(句)は注を参考にする こと)[各3点]

(A)

- A. Measuring time has been an obsession of humankind's from the most ancient of days, when people created sundials*, water clocks, and hour glasses to keep track of their lives.
- B. Yet a few prefer to work on their own and live by repairing antique clocks.
- C. To begin with, it takes an intense interest in understanding how things work.
- D. If anything, the demand for high quality clocks and watches may be growing.

Horology is the study of time, or more precisely, the study of the measurement of time. ((1)) Modern clocks have a history of only about 500 years, throughout which they have developed gradually. Yet, the advance of digital technology suddenly diminished the need for clocks and watches. People who make and repair such devices — known as horologists — found their job opportunities reduced. However, this soon resulted in a shortage of skilled horologists, and the position is now making a comeback.

It is true that modern people have a lesser need for timepieces^{*}. Why buy a watch, when learning the time is as simple as glancing at a smartphone? But now watches and clocks have transformed from mere time-keeping devices to exquisite accessory items for both individuals and homes. ((2)) These all require someone to repair them, as do

antique watches and clocks. Skilled horologists meet this need.

To become a horologist isn't easy. ((3)) Most horologists are keen on details and know the history of their field very well. They look upon each individual watch or clock as a personal project. Many thus enter the field as dedicated hobbyists. To become a licensed horologist takes more than a year of intense study, with the most grueling* curriculum being the Watchmakers of Switzerland Training and Education Program (WOSTEP). This requires over 3,000 hours of study.

Most horologists go on to careers with major watch-making companies. ((4)) These horologists view their work as challenging and beautiful as they try to preserve the history of time-keeping.

[注] sundial: 日時計

timepiece: 時計

grueling: 厳しい

- A. These positive mental developments attained through music at a young age can remain over the long term.
- B. Research has shown that playing music can change the structure of the brain so that it functions better.
- C. However, there are also clear benefits of learning musical instruments for older people.
- D. Another benefit to the brain that results from playing music includes an increase in the volume of "gray matter."

According to various scientific studies, one of the best things you can do for your brain is to learn to play a musical instrument. ((5)) The benefits from such changes include better long-term memory and greater power of concentration.

The mental gains from playing a musical instrument are clear from medical scans of the brains of musicians and non-musicians. The area of the brain called the corpus callosum, which contains the nerve fibers that connect the two sides of the brain, is much larger in musicians, as are the areas of the brain responsible for such functions as movement and hearing. ((6))

Harvard University professor Gottfried Schlaug found that after just 15 months of musical training in childhood, the structure of the brain begins to change, including improvements related to hearing and movement. ((7))

The change in the structure of the brain can protect a person against some problems that occur later in life, such as decreasing hearing ability. A study conducted by Nina Kraus, a neuroscientist* at Northwestern University, found that adults aged 55 to 76 who had played a musical instrument were better able to recognize the sound of the syllable "da." The results of the study showed that those with the longest musical training had the quickest response times to the sound.

The study suggests that learning a musical instrument helps to prevent the decline among older people's abilities to recognize the difference between such consonant sounds as "d" and "p." Another hearing benefit for musicians is the ability to recognize words even when there is a lot of background noise, which is often difficult for older people.

The greatest long-term mental gains come to those who have undergone musical training for many years and from a young age. ((8)) One recent study conducted on the impact of piano instruction on adults between the ages of 60 and 85 revealed that after just six months of learning the piano there were improvements in memory, speaking skills, and information-processing ability. This shows that it is never too late to learn — and benefit from — learning a musical instrument.

[注] neuroscientist: 神経科学者

4 次の英文を読んで、質問に答えなさい。(*印の語(句)は注を参考にすること)[各3点]

(A) Almost halfway between London and Cambridge lies a small country town that has been around for over 1,000 years. Visitors can walk the streets of Thaxted and see medieval houses as well as a restored windmill and a beautiful church. It is these streets and community that Gustav Holst, a famous English composer, musician and teacher, found to be the best environment for him and his family to escape from his busy travel, teaching schedule and life. He and his family would visit the town on weekends and holidays to rest and relax. In 1917, he and his wife bought a house in the town, and it is there that he spent much time working on his music. Holst and his family loved this town so much that one of his most famous compositions is named after it.

The score "Thaxted" is known across the world, but not all people who are familiar with it will know it for the same reasons. This composition forms the middle section of the "Jupiter" movement in his orchestral suite titled "The Planets." Holst created this suite because of his interest in astrology* and composed each movement to represent each of the planets, excluding Earth.

The year 1921 marked the first time that the score of "Thaxted" was arranged to create another musical work, the patriotic hymn "I Vow to Thee*, My Country." This was performed at the wedding of Prince Charles and Princess Diana in 1981. It was also performed at Princess Diana's funeral in 1997. In 2003, the Japanese singer Ayaka Hirahara released a pop song called "Jupiter," managing to sell almost a million copies which got her to No. 2 on the Oricon charts. This was a pop

music version of Holst's "Thaxted," and Japanese lyrics with some English lyrics mixed in were put to the music. It was a massive success, remaining in the charts for over three years, and helped to launch Hirahara's career. A variation of "Thaxted," entitled "Running," was also performed by Sarah Brightman at the opening ceremony of the 11th World Championships in Athletics held in Osaka in 2007. Fans of the rugby union will recognize the score as "World in Union," a theme song for the Rugby World Cup. The melody from "Thaxted" is so famous and well known that it has been adopted by many schools and universities as their graduation song, and it has been used in over 20 different hymns.

Thaxted is a thriving town where the past comes together with the present. This small country town's name, Thaxted, is also a piece of music that resonates^{*} with the past while it also is adapted to today's listening audience. The combination of this score with lyrics of equivalent brilliance has given "Thaxted" a strong connection with millions of people worldwide, even though most people are unaware of the original score's name or origin, or the small country town in Essex, England.

- [注] astrology: 占星術 thee: 汝(なんじ) resonate: 共鳴する
- 1. この英文の主題は次のどれか。
 - A.「ジュピター」が有名になった経緯
 - B. ホルストの音楽の商業的成功
 - C. ある有名なメロディの背景
 - D. イギリスのある村が世界的に有名になった経緯

- 2. 本文の内容と一致するものはどれか。
 - A.「サクステッド」は王室の結婚を祝うために作曲された。
 - B. ホルストの曲作りに多大な影響を与えたのは天文学への関心だった。
 - C. 組曲『惑星』には地球を主題にした楽曲がある。
 - D.「サクステッド」は編曲され、大きなスポーツイベントのテーマ曲として
 使われてきた。

次のページに進みなさい

(B) Science teachers before 2005 were teaching students about a nineplanet solar system of which our planet Earth is a part. But since 2005, partly because of the Kuiper Belt, it has become eight planets. The Kuiper Belt is a large donut-shaped collection of objects, mostly made of ice, that orbit the sun in the shape of a disc, much like the asteroid belt*. However, the Kuiper Belt is much larger than the asteroid belt and is farther away from the sun. The asteroid belt is found in an area beyond the orbit of Mars, and the Kuiper Belt is found in the area beyond the orbit of Neptune*, the outermost planet. Neptune's orbit marks the inner circle of the donut or the Kuiper Belt.

Although only 2,000 or so have been recorded, the Kuiper Belt contains millions of objects. Of those millions of objects, just one is known to almost every person: Pluto*. Pluto was first discovered in 1930 by Clyde Tombaugh using a 13-inch telescope, and at that time it was officially recognized as the ninth planet. However, over the years as scientists continued to study Pluto, they discovered that Pluto was actually smaller than Earth's moon. As scientists discussed Pluto's status as a planet, they finally officially reclassified Pluto as a "dwarf planet" in 2005.

Since Pluto was discovered, advances in astronomy have improved our understanding of the solar system. Especially in the 1990s, new information gathered through space exploration and observation based on advanced technology began to change the ideas about our solar system and the planets. The discovery of the Kuiper Belt itself showed that Pluto was not the main celestial body^{*} in its own orbit but rather one of many, many objects in the same orbit. In 2005, astronomers discovered other objects in the Kuiper Belt that were very similar in size and shape to Pluto. These and other facts ultimately led to its 2005 demotion* to the status of a dwarf planet.

Shortly thereafter, a group of scientists known as the International Astronomical Union (IAU) came up with new criteria for defining a planet. First, it must orbit the sun. Second, it must be massive enough so that its gravity pulls it into a round shape. Third, it must clear out other objects from its own orbit. In other words, its gravity must be dominant in that orbit. It is this third criterion that disqualifies Pluto from being a planet—it did not clear out other objects from its own orbit. This is why Pluto and other similar objects are now classified as dwarf planets.

- [注] asteroid belt: 小惑星带Neptune: 海王星Pluto: 冥王星celestial body: 天体demotion: 降格
- 3. この英文の主題は次のどれか。
 - A. カイパーベルトの発見に伴う学説の変化
 - B. 惑星と衛星の種類と定義
 - C. 海王星と冥王星の発見の経緯
 - D. 望遠鏡の発展と天体観察の進化
- 4. 本文での冥王星の説明に一致するのは次のどれか。
 - A. 1930年に冥王星が発見されて以来、惑星とすることには疑問が投げかけら れてきた。
 - B. 1990年代に、冥王星は当初の想定とは異なる位置にあることが判明した。
 - C. 2005年に、冥王星の軌道は小惑星帯のごく内側にあることがわかった。
 - D. 2005年に、冥王星は惑星の分類から正式に除外された。

- 5. カイパーベルトに関する記述として、本文と一致するのは次のどれか。 A. カイパーベルトには現在8つの惑星がある。
 - B. カイパーベルトには冥王星とほぼ同じ大きさの天体が多数ある。
 - C. カイパーベルトは火星の軌道の内側にある。
 - D. カイパーベルトは太陽系の中で小惑星帯よりも内側にある。

次のページに進みなさい

5 次の英文を読んで、質問に答えなさい。(*印の語(句)は注を参考にすること)[各3点]

(A) We like to think our brains are always correct — that our senses are always accurate. However, this is not always true. The brain arranges, sorts and organizes data from the senses. Normally the system works well. Sometimes it does not, and we see illusions. An illusion can be defined as something that deceives or misleads us intellectually. Illusions can happen with all five senses (taste, touch, sight, smell and hearing), and some involve the way information from two senses is put together. One of the oldest tactile or touch illusions is the Aristotle illusion.

The Aristotle illusion happens when you cross your index with your middle finger. After you cross your fingers and then you touch your nose with those crossed fingers, your brain interprets your nose as two separate objects because you have touched it with the outside of both fingers at the same time. Another similar illusion can happen when a person feels something that is not there, or something that should not be there but feels like it is. This happens sometimes when a person loses a limb, or their arm or leg. The person still feels like the arm or leg is there. They might want to scratch it, or the limb area might feel painful. This is called the phantom limb.

Of the various illusions we can experience, optical illusions are maybe the most common ones. Some optical illusions use color, light and patterns to create images that might be deceptive or mislead our brains. When we see an optical illusion, the information that we gather is processed in our brains, and that information creates a perception that does not match the true image. Perception is the interpretation of what we see through our eyes. These illusions occur because our brain tries to

interpret what we see and make sense of the world around us. Our brains are tricked into seeing things that may or may not be real. For example, architects use designs that make people view their works in certain ways. The architects of the ancient building called the Parthenon in Greece did this. They knew that straight lines viewed from certain angles appear curved, so they curved the lines of the Parthenon to make them appear straight. Though optical illusions play tricks on your eyes and confuse your brain, they are an enjoyable way of learning about the science of vision as well as a playful reminder that our assumptions about the visual world can sometimes be deceptive.

A lot of research is focused on comprehending how and why we see illusions, since to understand how we see, we need to recognize why it seems that we sometimes see incorrectly. Illusions, therefore, are critical windows into the mind. They make us realize not only that things are rarely what they seem, but also that our experiences of the world shape our understanding of it. They demonstrate how closely our eyes and brain work together to help us see.

- 1. What is the main idea of this passage?
 - A. There is a connection between illusions and accidents.
 - B. Research has resulted in technology reducing illusions in our lives.
 - C. Illusions are important ways to understand the mind.
 - D. The number of touch and optical illusions is greater than the illusions of the other senses.

- 2. According to the passage, which of the following is true?
 - A. When touching your nose with a finger, your brain causes you to interpret your nose as two objects.
 - B. Though optical illusions trick people's eyes and brains, they are a fun way to learn about the way people see the world.
 - C. A phantom illusion is something that can happen to anyone when they have hurt an arm or leg.
 - D. Aristotle designed the Parthenon using touch illusions so that the lines of the building would not appear curved to the naked eye.

次のページに進みなさい

(B) It's a storyline that pops up in countless works of science fiction literature, film and television: intelligent robots rise up against the human race and take over the world. As fantastical as it may seem, this disastrous vision of the future is grounded in real science and is a popular topic of debate among people who work in fields concerned with artificial intelligence or AI. As the theory goes, the development and refinement of AI technology will eventually result in that technology rapidly becoming so intelligent that it will reach a point when it permanently surpasses all human intelligence and capability. From this stage forward, technology is predicted to improve upon itself at an unprecedented rate without human involvement or input, and certainly without human permission.

That theoretical point in time is known as "the Singularity," the moment after which human life, and its relationship with machines, can never return to the way it used to be. John von Neumann, one of the greatest mathematicians and computer scientists of the 20th century, is the person that is most usually credited as the first person to state that the Singularity is the "accelerating progress of technology and changes in the mode of human life, which gives the appearance of approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue."

The Singularity is something that many people think about, and it will have a significant role in the world in which we live. Some predict that the Singularity, more than any other single phenomenon that mankind has created, will shape our lives, commerce, interpersonal relationships, financial markets, governments, and our political parties and their ideas. It will impact probably every single aspect of our lives. Most philosophers and scientists agree that there will be a turning point when there is an emergence of superintelligence. They also believe that time and speed will be a factor in this development, and smart systems will self-improve at an increasing rate.

Experts in the field, including engineers, computer programmers and science ethicists, disagree over whether this is an urgent concern for human beings. Some believe the benefits will surpass the dangers, leading to technologies that can solve society's problems, cure diseases or unlock the mysteries of our universe. Others suggest that such advancements assume too much that self-sufficient* AI will be friendly to human needs, especially after they no longer have any reason to be. From this perspective, if such a powerful force were to decide that we humans are no longer needed, it could lead to humanity's extinction. It is not beyond one's imagination to understand that a post-singularity world will be unrecognizable to us all. It may become a super-futuristic world where superintelligence capabilities could be added to humans. Brain-computer interfaces, biological alterations of the brain, brain implants and genetic engineering may all become a part of the postsingularity world. Humans may then live in a virtual world or as sentient* robots.

[注] self-sufficient: 自立した sentient: 感覚のある

- 3. What is the main topic of this passage?
 - A. Debates surrounding the future of AI
 - B. AI enhancing future medical advances
 - C. The reason AI appears so often in science fiction
 - D. Ethical issues in robotic engineering and computer chips

- 4. According to the passage, which of the following is true?
 - A. Both medical and biological technologies have gone as far as they can to incorporate AI.
 - B. Scientists are unified on the benefits versus the dangers of AI.
 - C. Once the Singularity occurs, humans will have different relations with AI.
 - D. Scientists are divided on the use of AI helping humans in space exploration.

次のページに進みなさい

(C) Human beings have been playing board games for centuries. Boards, dice, sticks and counters* have been found wherever humans have lived. Games have been found in the cradles of civilization, from Mesopotamia to Rome. Egyptians played a board game that was divided into squares with counters. Players threw sticks rather than rolling dice. Romans also played board games, and one which they played is quite similar to modern backgammon. Chess was probably invented in India in the 6th or 7th century AD or perhaps even earlier. A game similar to draughts*, or checkers as it is known by many today, was played by the ancient Egyptians, Greeks and Romans.

Of all the ancient games played, one game has caught the attention of historians due to the mystery surrounding how it is to be played. This game is called the "Royal Game of Ur" and was discovered in Ur in Iraq in the 1920s by an Englishman named Leonard Woolley. It was a very interesting discovery as it is believed that the game dates as far back as 4,600 years ago, but for decades, no one knew what the rules were for this game.

Another Englishman, Irving Finkel, has perhaps solved the mystery about how to play this game. Finkel, who worked for the British Museum, discovered an old tablet written in 177 BC, with a pattern on the back that looked like the squares of a board game. Finkel translated the text on the tablet and discovered that it discussed the "Royal Game of Ur."

The ancient tablet explained many details about the game. It said that certain squares on the board could bring players good luck, such as the one square that would make a player "as powerful as a lion." From the tablet, Finkel also learned the basic rules of the game, including the fact that the winner was the player who moved all five of the pieces

around the board first. The translation of the basic rules was a problem because the game appeared to be boring and not challenging at all. Luckily, different versions of this game have been found in many places around the Mediterranean Sea and the Middle East. With so many examples and variations, it can only be assumed that the game was not only popular but also lots of fun.

Today, there are some variations of this game. Historians have examined Finkel's translation of the rules and have combined the rules with other games dating back from around the same period which were found in the Mediterranean and Middle East areas. Games that are similar have game boards of 20 squares. The boards are quite alike, but the "Royal Game of Ur" board is much more elaborately designed with markings on each of the squares. Based on the information gained from researchers, the British Museum has made its own "Royal Game of Ur" board game and sells it to the general public.

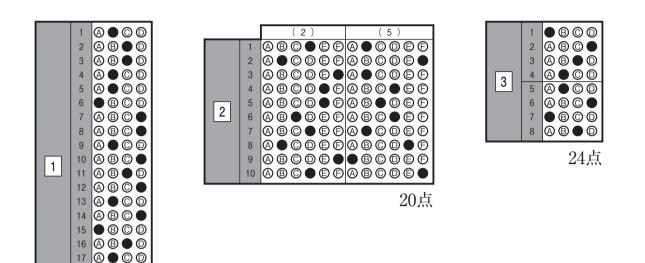
According to archaeological^{*} evidence, the game seemed to have been popular across the Middle East and other areas for many years. However, around 2,000 years ago, interest in the game died out. This was because the new, more popular game of backgammon appeared. But thanks to the work of two Englishmen, the "Royal Game of Ur" can once again be enjoyed today.

[注] counter: (ボードゲームで使われる) 駒draughts: ドラフツ (ボードゲームの一種) archaeological: 考古学の

- 5. What is the main topic of this passage?
 - A. The rules for the "Royal Game of Ur" created by the British Museum
 - B. How Irving Finkel discovered a tablet explaining the "Royal Game of Ur"
 - C. The research carried out by Englishman Leonard Woolley in the 1920s
 - D. An ancient board game that was discovered in the 20th century
- 6. According to the passage, which of the following is true?
 - A. Irving Finkel made a new and improved "Royal Game of Ur" in the 1980s.
 - B. The "Royal Game of Ur" became unpopular after a new game appeared.
 - C. Leonard Woolley was the first Englishman to play the "Royal Game of Ur."
 - D. People in Mesopotamia played the "Royal Game of Ur" for nearly 4,600 years.
- 7. What can be inferred by this passage?
 - A. The original "Royal Game of Ur" was popular because of its colorful board.
 - B. The "Royal Game of Ur" was used for fortune-telling 4,600 years ago.
 - C. New versions of the "Royal Game of Ur" are being made throughout the Mediterranean Sea area.
 - D. The "Royal Game of Ur" can be purchased by visitors to the British Museum.

外国語 (英語) 解答用紙





4	1 2 3 4 5	
		15点

20点

5	1	
	2	$\bigcirc \bigcirc $
	3	\bullet \otimes \circ \circ
	4	$A B \bullet O$
	5	$\otimes \otimes \otimes \bullet$
	6	$\bigcirc \bigcirc $
	7	$\textcircled{0}{0}$
		01 4

21点