

【雅思无忧】阅读精讲精练讲义

第一课 题型拾遗与释疑

第一篇

The Benefits of Being Bilingual (剑12 Test6 Passage3)

A According to the latest figures, the majority of the world's population is now bilingual or multilingual, having grown up speaking two or more languages. In the past, such children were considered to be at a disadvantage compared with their monolingual peers. Over the past few decades, however, technological advances have allowed researchers to look more deeply at how bilingualism interacts with and changes the cognitive and neurological systems, thereby identifying several clear benefits of being bilingual.

B Research shows that when a bilingual person uses one language, the other is active at the same time. When we hear a word, we don't hear the entire word all at once: the sounds arrive in sequential order. Long before the word is finished, the brain's language system begins to guess what that word might be. If you hear 'can', you will likely activate words like 'candy' and 'candle' as well, at least during the earlier stages of word recognition. For bilingual people, this activation is not limited to a single language; auditory input activates corresponding words regardless of the language to which they belong. Some of the most compelling evidence for this phenomenon, called 'language co-activation', comes from studying eye movements. A Russian-English bilingual asked to 'pick up a marker' from a set of objects would look more at a stamp than someone who doesn't know Russian, because the Russian word for 'stamp', marka, sounds like the English word he or she heard, 'marker'. In cases like this, language co-activation occurs because what the listener hears could map onto words in either language.

C Having to deal with this persistent linguistic competition can result in difficulties, however. For instance, knowing more than one language can cause speakers to name pictures more slowly, and can increase 'tip-of-the-tongue states', when you can almost, but not quite, bring a word to mind. As a result, the constant juggling of two languages creates a need to control how much a person accesses a language at any given time. For this reason, bilingual people often perform better on tasks that require conflict management. In the classic Stroop Task, people see a word and are asked to name the colour of the word's font. When the colour and the word match (i.e., the word 'red' printed in red), people correctly name the colour more quickly than when the colour and the word don't match (i.e., the word 'red' printed in blue). This occurs because the word itself ('red') and its font colour (blue) conflict. Bilingual people often excel at tasks such as this, which tap into the ability to ignore competing perceptual information and focus on the relevant aspects of the input. Bilinguals are also better at switching between two tasks; for example, when bilinguals have to switch from categorizing objects by colour (red or green) to categorizing them by shape (circle or triangle), they do so more quickly than monolingual people, reflecting better cognitive control when having to make rapid changes of strategy.

D It also seems that the neurological roots of the bilingual advantage extend to brain areas more traditionally associated with sensory processing. When monolingual and bilingual adolescents listen to simple speech sounds without any intervening background noise, they show highly similar brain stem responses. When researchers play the same sound to both groups in the presence of background noise, however, the bilingual listeners' neural response is considerably larger, reflecting better encoding of the sound's fundamental frequency,

a feature of sound closely related to pitch perception.

E Such improvements in cognitive and sensory processing may help a bilingual person to process information in the environment, and help explain why bilingual adults acquire a third language better than monolingual adults master a second language. This advantage may be rooted in the skill of focussing on information about the new language while reducing interference from the languages they already know.

F Research also indicates that bilingual experience may help to keep the cognitive mechanisms sharp by recruiting alternate brain networks to compensate for those that become damaged during aging. Older bilinguals enjoy improved memory relative to monolingual people, which can lead to real-world health benefits. In a study of over 200 patients with Alzheimer's disease, a degenerative brain disease, bilingual patients reported showing initial symptoms of the disease an average of five years later than monolingual patients. In a follow-up study, researchers compared the brains of bilingual and monolingual patients matched on the severity of Alzheimer's symptoms. Surprisingly, the bilinguals' brains had more physical signs of disease than their monolingual counterparts, even though their outward behaviour and abilities were the same. If the brain is an engine, bilingualism may help it to go farther on the same amount of fuel.

G Furthermore, the benefits associated with bilingual experience seem to start very early. In one study, researchers taught seven-month-old babies growing up in monolingual or bilingual homes that when they heard a tinkling sound, a puppet appeared on one side of a screen. Halfway through the study, the puppet began appearing on the opposite side of the screen. In order to get a reward, the infants had to adjust the rule they'd learned; only the bilingual babies were able to successfully learn the new rule. This suggests that for very young children, as well as for older people, navigating a multilingual environment imparts advantages that transfer far beyond language.

Questions 27-31

Complete the table below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Write your answers in boxes 27-31 on your answer sheet.

Test	Findings
Observing the 27 of Russian-English bilingual people when asked to select certain objects	Bilingual people engage both languages simultaneously: a mechanism known as 28
A test called the 29, focusing on naming colours	Bilingual people are more able to handle tasks involving a skill called 30
A test involving switching between tasks	When changing strategies, bilingual people have superior 31

第二篇

Collecting ants Specimens (剑8 Test4 Passage3)

Many ants are small and forage primarily in the layer of leaves and other debris on the ground. Collecting these species by hand can be difficult. One of the most successful ways to collect them is to gather the leaf litter in which they are foraging and extract the ants from it. This is most commonly done by placing leaf litter on a screen over a large funnel, often under some heat. As the leaf litter dries from above, ants (and other animals) move downward and eventually fall out the bottom and are collected in alcohol placed below the funnel. This method

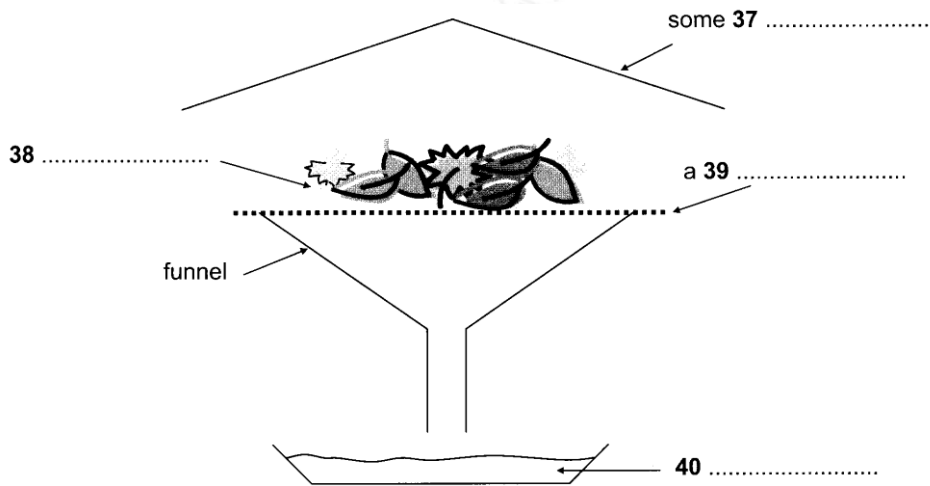
works especially well in rain forests and marshy areas. A method of improving the catch when using a funnel is to sift the leaf litter through a coarse screen before placing it above the funnel. This will concentrate the litter and remove larger leaves and twigs. It will also allow more litter to be sampled when using a limited number of funnels.

Questions 37-40

Choose NO MORE THAN TWO WORDS from the passage for each answer.

Write your answers in boxes 37-40 on your answer sheet.

One method of collecting ants



第三篇

Doctoring sales (剑6 Test4 Passage1)

Pharmaceuticals is one of the most profitable industries in North America. But do the drugs industry's sales and marketing strategies go too far?

A A few months ago Kim Schaefer, sales representative of a major global pharmaceutical company, walked into a medical center in New York to bring information and free samples of her company's latest products. That day she was lucky - a doctor was available to see her. 'The last rep offered me a trip to Florida. What do you have?' the physician asked. He was only half joking.

B What was on offer that day was a pair of tickets for a New York musical. But on any given day, what Schaefer can offer is typical for today's drugs rep - a car trunk full of promotional gifts and gadgets, a budget that could buy lunches and dinners for a small country, hundreds of free drug samples and the freedom to give a physician \$200 to prescribe her new product to the next six patients who fit the drug's profile. And she also has a few \$1,000 honoraria to offer in exchange for doctors' attendance at her company's next educational lecture.

C Selling pharmaceuticals is a daily exercise in ethical judgement. Salespeople like Schaefer walk the line between the common practice of buying a prospect's time with a free meal, and bribing doctors to prescribe their drugs. They work in an industry highly criticized for its sales and marketing practices, but find themselves in the middle of the age-old chicken-or-egg question - businesses won't use strategies that don't work, so are doctors to blame for the escalating extravagance of pharmaceutical marketing? Or is it the industry's responsibility to decide the boundaries?

D The explosion in the sheer number of salespeople in the field - and the amount of funding used to

promote their causes - forces close examination of the pressures, influences and relationships between drug reps and doctors. Salespeople provide much-needed information and education to physicians. In many cases the glossy brochures, article reprints and prescriptions they deliver are primary sources of drug education for healthcare givers. With the huge investment the industry has placed in face-to-face selling, salespeople have essentially become specialists in one drug or group of drugs - a tremendous advantage in getting the attention of busy doctors in need of quick information.

E But the sales push rarely stops in the office. The flashy brochures and pamphlets left by the sales reps are often followed up with meals at expensive restaurants, meetings in warm and sunny places, and an inundation of promotional gadgets. Rarely do patients watch a doctor write with a pen that isn't emblazoned with a drug's name, or see a nurse use a tablet not bearing a pharmaceutical company's logo. Millions of dollars are spent by pharmaceutical companies on promotional products like coffee mugs, shirts, umbrellas, and golf balls. Money well spent? It's hard to tell. 'I've been the recipient of golf balls from one company and I use them, but it doesn't make me prescribe their medicine,' says one doctor. 'I tend to think I'm not influenced by what they give me.'

F Free samples of new and expensive drugs might be the single most effective way of getting doctors and patients to become loyal to a product. Salespeople hand out hundreds of dollars' worth of samples each week - \$7.2 billion worth of them in one year. Though few comprehensive studies have been conducted, one by the University of Washington investigated how drug sample availability affected what physicians prescribe. A total of 131 doctors self-reported their prescribing patterns - the conclusion was that the availability of samples led them to dispense and prescribe drugs that differed from their preferred drug choice.

G The bottom line is that pharmaceutical companies as a whole invest more in marketing than they do in research and development. And patients are the ones who pay - in the form of sky-rocketing prescription prices - for every pen that's handed out, every free theatre ticket, and every steak dinner eaten. In the end the fact remains that pharmaceutical companies have every right to make a profit and will continue to find new ways to increase sales. But as the medical world continues to grapple with what's acceptable and what's not, it is clear that companies must continue to be heavily scrutinized for their sales and marketing strategies.

Questions 8-13

Do the following statements agree with the views of the writer in Reading Passage 1?

In boxes 8-13 on your answer sheet, write

- | | |
|-----------|--|
| YES | if the statement agrees with the views of the writer |
| NO | if the statement contradicts the views of the writer |
| NOT GIVEN | if it is impossible to say what the writer thinks about this |

- 8 Sales representatives like Kim Schaefer work to a very limited budget.
- 9 Kim Schaefer's marketing technique may be open to criticism on moral grounds.
- 10 The information provided by drug companies is of little use to doctors.
- 11 Evidence of drug promotion is clearly visible in the healthcare environment.
- 12 The drug companies may give free drug samples to patients without doctors' prescriptions.
- 13 It is legitimate for drug companies to make money.

第四篇

(剑9 Test2 Passage1)

- A. Hearing impairment or other auditory function deficit in young children can have a major impact on their development of speech and communication, resulting in a detrimental effect on their ability to learn at school. This is likely to have major consequences for the individual and the population as a whole. The New Zealand Ministry of Health has found from research carried out over two decades that 6-10% of children in that country are affected by hearing loss.
- B. A preliminary study in New Zealand has shown that classroom noise presents a major concern for teachers and pupils. Modern teaching practices, the organizations of desks in the classroom, poor classroom acoustics, and mechanical means of ventilation such as air-conditioning units all contribute to the number of children unable to comprehend the teacher's voice. Education researchers Nelson and Soli have also suggested that recent trends in learning often involve collaborative interaction of multiple minds and tools as much as individual possession of information. This all amounts to heightened activity and noise levels, which have the potential to be particularly serious for children experiencing auditory function deficit. Noise in classroom can only exacerbate their difficulty in comprehending and processing verbal communication with other children and instructions from the teacher.
- C. Children with auditory function deficit are potentially failing to learn to their maximum potential because of noise levels generated in classrooms. The effects of noise on the ability of children to learn effectively in typical classroom environment are now the subjects of increasing concern. The International Institute of Noise Control Engineering (I-INCE), on the advice of the World Health Organization, has established an international working party, which includes New Zealand, to evaluate noise and reverberation control for school rooms.
- D. While the detrimental effects of noise in classroom situations are not limited to children experiencing disability, those with a disability that affects their processing of speech and verbal communication could be extremely vulnerable. The auditory function deficits in question include hearing impairment, autistic spectrum disorders (ASD) and attention deficit disorders (ADD/ADHD).
- E. Autism is considered a neurological and genetic life-long disorder that causes discrepancies in the way information is processed. This disorder is characterized by interlinking problems with social imagination, social communication and social interaction. According to Janzen, this affects the ability to understand and relate in typical ways to people, understand events and objects in the environment, and understand or respond to sensory stimuli. Autism does not allow learning or thinking in the same ways as in children who are developing normally. Autistic spectrum disorders often result in major difficulties in comprehending verbal information and speech processing. Those experiencing these disorders often find sounds such as crowd noise and the noise generated by machinery painful and distressing. This is difficult to scientifically quantify as such extra-sensory stimuli vary greatly from one autistic individual to another. But a child who finds any type of noise in their classroom or learning space intrusive is likely to be adversely affected in their ability to process information.
- F. The attention deficit disorders are indicative of neurological and genetic disorders and are characterized by difficulties with sustaining attention, effort and persistence, organization skills and disinhibition. Children experiencing these disorders find it difficult to screen out unimportant information, and focus on everything in the environment rather than attending to a single activity. Background noise in the classroom becomes a major distraction, which can affect their ability to concentrate.
- G. Children experiencing an auditory function deficit can often find speech and communication very difficult to isolate and process when set against high levels of background noise. These levels come from outside activities that penetrate the classroom structure, from teaching activities, and other noise generated inside, which can be exacerbated by room reverberation. Strategies are needed to obtain the optimum classroom construction and perhaps a change in classroom culture and methods of teaching. In particular, the effects

- of noisy classrooms and activities on those experiencing disabilities in the form of auditory function deficit need thorough investigation. It is probable that many undiagnosed children exist in the education system with 'invisible' disabilities. Their needs are less likely to be met than those of children with known disabilities.
- H. The New Zealand Government has developed a New Zealand Disability Strategy and has embarked on a wide-ranging consultation process. The strategy recognizes that people experiencing disability face significance barriers in achieving a full quality of life in areas such as attitude, education, employment and access to services. Objective 3 of the New Zealand Disability Strategy is to 'Provide the Best Education for Disabled People' by improving education so that all children, youth learners and adult learners will have equal opportunities to learn and develop within their already existing local school. For a successful education, the learning environment is vitally significant, so any effort to improve this is likely to be of great benefit to all children, but especially to those with auditory function disabilities.
- I. A number of countries are already in the process of formulating their own standards for the control and reduction of classroom noise. New Zealand will probably follow their example. The literature to date on noise in school rooms appears to focus on the effects on schoolchildren in general, their teachers and the hearing impaired. Only limited attention appears to have been given to those students experiencing the other disabilities involving auditory function deficit. It is imperative that the needs of these children are taken into account in the setting of appropriate international standards to be promulgated in future.

Questions 11 and 12

Choose TWO letters, A—F.

Write the correct letters in boxes 11 and 12 on your answer sheet.

The list below includes factors contributing to classroom noise.

Which TWO are mentioned by the writer of the passage?

- A current teaching methods
- B echoing corridors
- C cooling systems
- D large class sizes
- E loud-voiced teachers
- F playground games

第二课 阅读方法论

第一篇

The Return of Artificial Intelligence (剑5 Test3 Passage3)

It is becoming acceptable again to talk of computers performing human tasks such as problem-solving and pattern-recognition

A After years in the wilderness, the term ‘artificial intelligence’ (AI) seems poised to make a comeback. AI was big in the 1980s but vanished in the 1990s. It re-entered public consciousness with the release of *AI*, a movie about a robot boy. This has ignited public debate about AI, but the term is also being used once more within the computer industry. Researchers, executives and marketing people are now using the expression without irony or inverted commas. And it is not always hype. The term is being applied, with some justification, to products that depend on technology that was originally developed by AI researchers. Admittedly, the rehabilitation of the term has a long way to go, and some firms still prefer to avoid using it. But the fact that others are starting to use it again suggests that AI has moved on from being seen as an over-ambitious and under-achieving field of research.



B The field was launched, and the term ‘artificial intelligence’ coined, at a conference in 1956 by a group of researchers that included Marvin Minsky, John McCarthy, Herbert Simon and Alan Newell, all of whom went on to become leading figures in the field. The expression provided an attractive but informative name for a research programme that encompassed such previously disparate fields as operations research, cybernetics, logic and computer science. The goal they shared was an attempt to capture or mimic human abilities using machines. That said, different groups of researchers attacked different problems, from speech recognition to chess playing, in different ways; AI unified the field in name only. But it was a term that captured the public imagination.

C Most researchers agree that AI peaked around 1985. A public **reared** on science-fiction movies and excited by the growing power of computers had high expectations. For years, AI researchers had implied that a breakthrough was just around the corner. Marvin Minsky said in 1967 that within a generation the problem of creating ‘artificial intelligence’ would be substantially solved. Prototypes of medical-diagnosis programs and speech recognition software appeared to be making progress. It proved to be a false dawn. Thinking computers and household robots failed to materialise, and a backlash ensued. ‘There was undue optimism in the early 1980s,’ says David Leake, a researcher at Indiana University. ‘Then when people realised these were hard problems, there was retrenchment. By the late 1980s, the term AI was being avoided by many researchers, who opted instead to align themselves with specific sub-disciplines such as neural networks, agent technology, case-based reasoning, and so on.’

D Ironically, in some ways AI was a victim of its own success. Whenever an apparently mundane problem was solved, such as building a system that could land an aircraft unattended, the problem was deemed not to have been AI in the first place. ‘If it works, it can’t be AI,’ as Dr Leake characterises it. The effect of repeatedly moving the goal-posts in this way was that AI came to refer to ‘blue-sky’ research that was still years away from commercialisation. Researchers joked that AI stood for ‘almost implemented’. Meanwhile, the technologies that made it onto the market, such as speech recognition, language translation and decision-support software, were no longer regarded as AI. Yet all three once fell well within the umbrella of AI research.

E But the tide may now be turning, according to Dr Leake. HNC Software of San Diego, backed by a

government agency, reckon that their new approach to artificial intelligence is the most powerful and promising approach ever discovered. HNC claim that their system, based on a cluster of 30 processors, could be used to spot camouflaged vehicles on a battlefield or extract a voice signal from a noisy background - tasks humans can do well, but computers cannot. 'Whether or not their technology lives up to the claims made for it, the fact that HNC are emphasising the use of AI is itself an interesting development,' says Dr Leake.

F Another factor that may boost the prospects for AI in the near future is that investors are now looking for firms using clever technology, rather than just a clever business model, to differentiate themselves. In particular, the problem of information overload, exacerbated by the growth of e-mail and the explosion in the number of web pages, means there are plenty of opportunities for new technologies to help filter and categorise information - classic AI problems. That may mean that more artificial intelligence companies will start to emerge to meet this challenge.

G The 1969 film, 2001: A Space Odyssey, featured an intelligent computer called HAL 9000. As well as understanding and speaking English, HAL could play chess and even learned to lipread. HAL thus encapsulated the optimism of the 1960s that intelligent computers would be widespread by 2001. But 2001 has been and gone, and there is still no sign of a HAL-like computer. Individual systems can play chess or transcribe speech, but a general theory of machine intelligence still remains elusive. It may be, however, that the comparison with HAL no longer seems quite so important, and AI can now be judged by what it can do, rather than by how well it matches up to a 30-year-old science-fiction film. 'People are beginning to realise that there are impressive things that these systems can do,' says Dr Leake hopefully.

Questions 27 - 31

Reading Passage 3 has seven paragraphs, A-G.

Which paragraph contains the following information?

Write the correct letter A-G in boxes 27-31 on your answer sheet.

NB You may use any letter more than once.

27 how AI might have a military impact

28 the fact that AI brings together a range of separate research areas

29 the reason why AI has become a common topic of conversation again

30 how AI could help deal with difficulties related to the amount of information available electronically

31 where the expression AI was first used

Questions 32-37

Do the following statements agree with the information given in Reading Passage 3?

In boxes 32-37 on your answer sheet, write

TRUE if the statement agrees with the information

FALSE if the statement contradicts the information

NOT GIVEN if there is no information about this

32 The researchers who launched the field of AI had worked together on other projects in the past.

33 In 1985, AI was at its lowest point.

34 Research into agent technology was more costly than research into neural networks.

35 Applications of AI have already had a degree of success.

36 The problems waiting to be solved by AI have not changed since 1967.

37 The film 2001: A Space Odyssey reflected contemporary ideas about the potential of AI computers.

Questions 38-40

Choose the correct letter A, B, C or D.

Write your answers in boxes 38-40 on your answer sheet.

- 38 According to researchers, in the late 1980s there was a feeling that
- A a general theory of AI would never be developed.
 - B original expectations of AI may not have been justified.
 - C a wide range of applications was close to fruition.
 - D more powerful computers were the key to further progress.
- 39 In Dr Leake's opinion, the reputation of AI suffered as a result of
- A changing perceptions.
 - B premature implementation.
 - C poorly planned projects.
 - D commercial pressures.
- 40 The prospects for AI may benefit from
- A existing AI applications.
 - B new business models.
 - C orders from internet-only companies.
 - D new investment priorities.

第二篇

List of Headings

- i Differences between languages highlight their impressiveness
- ii The way in which a few sounds are organised to convey a huge range of meaning
- iii Why the sounds used in different languages are not identical
- iv Apparently incompatible characteristics of language
- v Even silence can be meaningful
- vi Why language is the most important invention of all
- vii The universal ability to use language

- 27 Paragraph A
- 28 Paragraph B
- 29 Paragraph C
- 30 Paragraph D
- 31 Paragraph E
- 32 Paragraph F

'This Marvellous Invention'

(剑11 Test4 Passage3)

- A Of all mankind's manifold creations, language must take pride of place. Other inventions - the wheel,

agriculture, sliced bread - may have transformed our material existence, but the advent of language is what made us human. Compared to language, all other inventions pale in significance, since everything we have ever achieved depends on language and originates from it. Without language, we could never have embarked on our ascent to unparalleled power over all other animals, and even over nature itself.

B But language is foremost not just because it came first. In its own right it is a tool of extraordinary sophistication, yet based on an idea of ingenious simplicity: 'this marvellous invention of composing out of twenty-five or thirty sounds that infinite variety of expressions which, whilst having in themselves no likeness to what is in our mind, allow us to disclose to others its whole secret, and to make known to those who cannot penetrate it all that we imagine, and all the various stirrings of our soul'. This was how, in 1660, the renowned French grammarians of the Port-Royal abbey near Versailles distilled the essence of language, and no one since has celebrated more eloquently the magnitude of its achievement. Even so, there is just one flaw in all these hymns of praise, for the homage to language's unique accomplishment conceals a simple yet critical incongruity. Language is mankind's greatest invention - except, of course, that it was never invented. This apparent paradox is at the core of our fascination with language, and it holds many of its secrets.

C Language often seems so skillfully drafted that one can hardly imagine it as anything other than the perfected handiwork of a master craftsman. How else could this instrument make so much out of barely three dozen measly morsels of sound? In themselves, these configurations of mouth -p,fb,v,t,d,k,g,sh,a,e and so on - amount to nothing more than a few haphazard spits and splutters, random noises with no meaning, no ability to express, no power to explain. But run them through the cogs and wheels of the language machine, let it arrange them in some very special orders, and there is nothing that these meaningless streams of air cannot do: from sighing the interminable boredom of existence to unravelling the fundamental order of the universe.

第三篇

Preface to 'How the other half thinks: Adventures in mathematical reasoning'

(剑11 Test3 Passage3)

A Occasionally, in some difficult musical compositions, there are beautiful, but easy parts - parts so simple a beginner could play them. So it is with mathematics as well. There are some discoveries in advanced mathematics that do not depend on specialized knowledge, not even on algebra, geometry, or trigonometry. Instead they may involve, at most, a little arithmetic, such as 'the sum of two odd numbers is even', and common sense. Each of the eight chapters in this book illustrates this phenomenon. Anyone can understand every step in the reasoning.

The thinking in each chapter uses at most only elementary arithmetic, and sometimes not even that. Thus all readers will have the chance to participate in a mathematical experience, to appreciate the beauty of mathematics, and to become familiar with its logical, yet intuitive, style of thinking.

B One of my purposes in writing this book is to give readers who haven't had the opportunity to see and enjoy real mathematics the chance to appreciate the mathematical way of thinking. I want to reveal not only some of the fascinating discoveries, but, more importantly, the reasoning behind them.

In that respect, this book differs from most books on mathematics written for the general public. Some present the lives of colorful mathematicians. Others describe important applications of mathematics. Yet others go into mathematical procedures, but assume that the reader is adept in using algebra.

C I hope this book will help bridge that notorious gap that separates the two cultures: the humanities and the sciences, or should I say the right brain (intuitive) and the left brain (analytical, numerical). As the chapters

will illustrate, mathematics is not restricted to the analytical and numerical; intuition plays a significant role. The alleged gap can be narrowed or completely overcome by anyone, in part because each of us is far from using the full capacity of either side of the brain. To illustrate our human potential, I cite a structural engineer who is an artist, an electrical engineer who is an opera singer, an opera singer who published mathematical research, and a mathematician who publishes short stories.

D Other scientists have written books to explain their fields to non-scientists, but have necessarily had to omit the mathematics, although it provides the foundation of their theories. The reader must remain a tantalized spectator rather than an involved participant, since the appropriate language for describing the details in much of science is mathematics, whether the subject is expanding universe, subatomic particles, or chromosomes. Though the broad outline of a scientific theory can be sketched intuitively, when a part of the physical universe is finally understood, its description often looks like a page in a mathematics text.

E Still, the non-mathematical reader can go far in understanding mathematical reasoning. This book presents the details that illustrate the mathematical style of thinking, which involves sustained, step-by-step analysis, experiments, and insights. You will turn these pages much more slowly than when reading a novel or a newspaper. It may help to have a pencil and paper ready to check claims and carry out experiments.

F As I wrote, I kept in mind two types of readers: those who enjoyed mathematics until they were turned off by an unpleasant episode, usually around fifth grade, and mathematics aficionados, who will find much that is new throughout the book.

This book also serves readers who simply want to sharpen their analytical skills. Many careers, such as law and medicine, require extended, precise analysis. Each chapter offers practice in following a sustained and closely argued line of thought. That mathematics can develop this skill is shown by these two testimonials:

G A physician wrote, 'The discipline of analytical thought processes [in mathematics] prepared me extremely well for medical school. In medicine one is faced with a problem which must be thoroughly analyzed before a solution can be found. The process is similar to doing mathematics.'

A lawyer made the same point, 'Although I had no background in law - not even one political science course - I did well at one of the best law schools. I attribute much of my success there to having learned, through the study of mathematics, and, in particular, theorems, how to analyze complicated principles. Lawyers who have studied mathematics can master the legal principles in a way that most others cannot.'

I hope you will share my delight in watching as simple, even naïve, questions lead to remarkable solutions and purely theoretical discoveries find unanticipated applications.

Questions 27-34

Reading Passage 3 has seven sections, A-G.

Which section contains the following information?

Write the correct letter, A-G, in boxes 27-34 on your answer sheet.

NB You may use any letter more than once.

- 27 a reference to books that assume a lack of mathematical knowledge
- 28 the way in which this is not a typical book about mathematics
- 29 personal examples of being helped by mathematics
- 30 examples of people who each had abilities that seemed incompatible
- 31 mention of different focuses of books about mathematics
- 32 a contrast between reading this book and reading other kinds of publication
- 33 a claim that the whole of the book is accessible to everybody
- 34 a reference to different categories of intended readers of this book

总结篇

(剑 13 Test4)

READING PASSAGE 1

You should spend about 20 minutes on **Questions 1-13**, which are based on Reading Passage 1 below.

Cutty Sark: the fastest sailing ship of all time

The nineteenth century was a period of great technological development in Britain, and for shipping the major changes were from wind to steam power, and from wood to iron and steel.

The fastest commercial sailing vessels of all time were clippers, three-masted ships built to transport goods around the world, although some also took passengers. From the 1840s until 1869, when the Suez Canal opened and steam propulsion was replacing sail, clippers dominated world trade. Although many were built, only one has survived more or less intact: Cutty Sark, now on display in Greenwich, southeast London.

Cutty Sark's unusual name comes from the poem Tam O' Shanter by the Scottish poet Robert Burns. Tam, a farmer, is chased by a witch called Nannie, who is wearing a 'cutty sark' - an old Scottish name for a short nightdress. The witch is depicted in Cutty Sark's figurehead - the carving of a woman typically at the front of old sailing ships. In legend, and in Burns's poem, witches cannot cross water, so this was a rather strange choice of name for a ship.

Cutty Sark was built in Dumbarton, Scotland, in 1869, for a shipping company owned by John Willis. To carry out construction, Willis chose a new shipbuilding firm, Scott & Linton, and ensured that the contract with them put him in a very strong position. In the end, the firm was forced out of business, and the ship was finished by a competitor.

Willis's company was active in the tea trade between China and Britain, where speed could bring shipowners both profits and prestige, so Cutty Sark was designed to make the journey more quickly than any other ship. On her maiden voyage, in 1870, she set sail from London, carrying large amounts of goods to China. She returned laden with tea, making the journey back to London in four months. However, Cutty Sark never lived up to the high expectations of her owner, as a result of bad winds and various misfortunes. On one occasion, in 1872, the ship and a rival clipper, Thermopylae, left port in China on the same day. Crossing the Indian Ocean, Cutty Sark gained a lead of over 400 miles, but then her rudder was severely damaged in stormy seas, making her impossible to steer. The ship's crew had the daunting task of repairing the rudder at sea, and only succeeded at the second attempt. Cutty Sark reached London a week after Thermopylae.

Steam ships posed a growing threat to clippers, as their speed and cargo capacity increased. In addition, the opening of the Suez Canal in 1869, the same year that Cutty Sark was launched, had a serious impact. While steam ships could make use of the quick, direct route between the Mediterranean and the Red Sea, the canal was of no use to sailing ships, which needed the much stronger winds of the oceans, and so had to sail a far greater distance. Steam ships reduced the journey time between Britain and China by approximately two months.

By 1878, tea traders weren't interested in Cutty Sark, and instead, she took on the much less prestigious work of carrying any cargo between any two ports in the world. In 1880, violence aboard the ship led ultimately to the replacement of the captain with an incompetent drunkard who stole the crew's wages. He was suspended from service, and a new captain appointed. This marked a turnaround and the beginning of the most successful period in Cutty Sark's working life, transporting wool from Australia to Britain. One such journey took just under 12 weeks, beating every other ship sailing that year by around a month.

The ship's next captain, Richard Woodget, was an excellent navigator, who got the best out of both his ship

and his crew. As a sailing ship, Cutty Sark depended on the strong trade winds of the southern hemisphere, and Woodget took her further south than any previous captain, bringing her dangerously close to icebergs off the southern tip of South America. His gamble paid off, though, and the ship was the fastest vessel in the wool trade for ten years.

As competition from steam ships increased in the 1890s, and Cutty Sark approached the end of her life expectancy, she became less profitable. She was sold to a Portuguese firm, which renamed her Ferreira. For the next 25 years, she again carded miscellaneous cargoes around the world.

Badly damaged in a gale in 1922, she was put into Falmouth harbour in southwest England, for repairs. Wilfred Dowman, a retired sea captain who owned a training vessel, recognised her and tried to buy her, but without success. She returned to Portugal and was sold to another Portuguese company. Dowman was determined, however, and offered a high price: this was accepted, and the ship returned to Falmouth the following year and had her original name restored.

Dowman used Curry Sark as a training ship, and she continued in this role after his death. When she was no longer required, in 1954, she was transferred to dry dock at Greenwich to go on public display. The ship suffered from fire in 2007, and again, less seriously, in 2014, but now Cutty Sark attracts a quarter of a million visitors a year.

Questions 1-8

Do the following statements agree with the information given in Reading Passage 1?

In boxes 1-8 on your answer sheet, write

- TRUE if the statement agrees with the information
FALSE if the statement contradicts the information
NOT GIVEN if there is no information on this

- 1 Clippers were originally intended to be used as passenger ships.
- 2 Cutty Sark was given the name of a character in a poem.
- 3 The contract between John Willis and Scott & Linton favoured Willis.
- 4 John Willis wanted Cutty Sark to be the fastest tea clipper travelling between the UK and China.
- 5 Despite storm damage, Cutty Sark beat Thermopylae back to London.
- 6 The opening of the Suez Canal meant that steam ships could travel between Britain and China faster than clippers.
- 7 Steam ships sometimes used the ocean route to travel between London and China.
- 8 Captain Woodget put Cutty Sark at risk of hitting an iceberg.

Questions 9-13

Complete the sentences below

Choose ONE WORD ONLY from the passage for each answer.

Write your answers in boxes 9-13 on your answer sheet.

- 9 After 1880, Cutty Sark carried _____ as its main cargo during its most successful time.
- 10 As a captain and _____, Woodget was very skilled.
- 11 Ferreira went to Falmouth to repair damage that a _____ had caused.
- 12 Between 1923 and 1954, Cutty Sark was used for _____.
- 13 Cutty Sark has twice been damaged by _____ in the 21st century.

READING PASSAGE 2

You should spend about 20 minutes on Questions 14-26, which are based on Reading Passage 2 below.

SAVING THE SOIL

More than a third of the Earth's top layer is at risk. Is there hope for our planet's most precious resource ?

A More than a third of the world's soil is endangered, according to a recent UN report. If we don't slow the decline, all farmable soil could be gone in 60 years. Since soil grows 95% of our food, and sustains human life in other more surprising ways, that is a huge problem.

B Peter Groffman, from the Cary Institute of Ecosystem Studies in New York, points out that soil scientists have been warning about the degradation of the world's soil for decades. At the same time, our understanding of its importance to humans has grown. A single gram of healthy soil might contain 100 million bacteria, as well as other microorganisms such as viruses and fungi, living amid decomposing plants and various minerals.

That means soils do not just grow our food, but are the source of nearly all our existing antibiotics, and could be our best hope in the fight against antibiotic-resistant bacteria. Soil is also an ally against climate change: as microorganisms within soil digest dead animals and plants, they lock in their carbon content, holding three times the amount of carbon as does the entire atmosphere. Soils also store water, preventing flood damage: in the UK, damage to buildings, roads and bridges from floods caused by soil degradation costs ~233 million every year.

C If the soil loses its ability to perform these functions, the human race could be in big trouble. The danger is not that the soil will disappear completely, but that the microorganisms that give it its special properties will be lost. And once this has happened, it may take the soil thousands of years to recover.

Agriculture is by far the biggest problem. In the wild, when plants grow they remove nutrients from the soil, but then when the plants die and decay these nutrients are returned directly to the soil. Humans tend not to return unused parts of harvested crops directly to the soil to enrich it, meaning that the soil gradually becomes less fertile. In the past we developed strategies to get around the problem, such as regularly varying the types of crops grown, or leaving fields uncultivated for a season.

D But these practices became inconvenient as populations grew and agriculture had to be run on more commercial lines. A solution came in the early 20th century with the Haber-Bosch process for manufacturing ammonium nitrate. Farmers have been putting this synthetic fertiliser on their fields ever since.

But over the past few decades, it has become clear this wasn't such a bright idea. Chemical fertilisers can release polluting nitrous oxide into the atmosphere and excess is often washed away with the rain, releasing nitrogen into rivers. More recently, we have found that indiscriminate use of fertilisers hurts the soil itself, turning it acidic and salty, and degrading the soil they are supposed to nourish.

E One of the people looking for a solution to this problem is Pius Floris, who started out running a tree-care business in the Netherlands, and now advises some of the world's top soil scientists. He came to realise that the best way to ensure his trees flourished was to take care of the soil, and has developed a cocktail of beneficial bacteria, fungi and humus* to do this. Researchers at the University of Valladolid in Spain recently used this cocktail on soils destroyed by years of fertiliser overuse. When they applied Floris's mix to the desert-like test plots, a good crop of plants emerged that were not just healthy at the surface, but had roots strong enough to pierce dirt as hard as rock. The few plants that grew in the control plots, fed with traditional fertilisers, were small and weak.

F However, measures like this are not enough to solve the global soil degradation problem. To assess our options on a global scale we first need an accurate picture of what types of soil are out there, and the problems they face. That's not easy. For one thing, there is no agreed international system for classifying soil. In an attempt to unify the different approaches, the UN has created the Global Soil Map project. Researchers from nine

countries are working together to create a map linked to a database that can be fed measurements from field surveys, drone surveys, satellite imagery, lab analyses and so on to provide real-time data on the state of the soil. Within the next four years, they aim to have mapped soils worldwide to a depth of 100 metres, with the results freely accessible to all.

G But this is only a first step. We need ways of presenting the problem that bring it home to governments and the wider public, says Pamela Chasek at the International Institute for Sustainable Development, in Winnipeg, Canada. 'Most scientists don't speak language that policy-makers can understand, and vice versa.' Chasek and her colleagues have proposed a goal of 'zero net land degradation'. Like the idea of carbon neutrality, it is an easily understood target that can help shape expectations and encourage action.

For soils on the brink, that may be too late. Several researchers are agitating for the immediate creation of protected zones for endangered soils. One difficulty here is defining what these areas should conserve: areas where the greatest soil diversity is present? Or areas of unspoilt soils that could act as a future benchmark of quality?

Whatever we do, if we want our soils to survive, we need to take action now.

* Humus: the part of the soil formed from dead plant material

Questions 14-17

Complete the summary below

Write ONE WORD ONLY from the passage for each answer.

Write your answers in boxes 14-17 on your answer sheet.

Why soil degradation could be a disaster for humans

Healthy soil contains a large variety of bacteria and other microorganisms, as well as plant remains and 14 _____. It provides us with food and also with antibiotics, and its function in storing 15 _____ has a significant effect on the climate. In addition, it prevents damage to property and infrastructure because it holds 16 _____.

If these microorganisms are lost, soil may lose its special properties. The main factor contributing to soil degradation is the 17 _____ carried out by humans.

Questions 18-21

Complete each sentence with the correct ending, A-F, below.

Write the correct letter, A-F, in boxes 18-21 on your answer sheet.

- 18 Nutrients contained in the unused parts of harvested crops
- 19 Synthetic fertilisers produced with the Haber-Bosch process
- 20 Addition of a mixture developed by Plus Floris to the soil
- 21 The idea of zero net soil degradation

- | |
|---|
| <p>A may improve the number and quality of plants growing there.</p> <p>B may contain data from up to nine countries.</p> <p>C may not be put back into the soil.</p> <p>D may help governments to be more aware of soil-related issues.</p> <p>E may cause damage to different aspects of the environment.</p> <p>F may be better for use at a global level.</p> |
|---|

Questions 22-26

Reading Passage 2 has seven paragraphs, A-G.

Which section contains the following information?

Write the correct letter, A-G, in boxes 22-26 on your answer sheet.

NB You may use any letter more than once.

- 22 a reference to one person's motivation for a soil-improvement project
- 23 an explanation of how soil stayed healthy before the development of farming
- 24 examples of different ways of collecting information on soil degradation
- 25 a suggestion for a way of keeping some types of soil safe in the near future
- 26 a reason why it is difficult to provide an overview of soil degradation

READING PASSAGE 3

You should spend about 20 minutes on **Questions 27-40**, which are based on Reading Passage 3 below

Book Review

The Happiness Industry: How the Government and Big Business
Sold Us Well-Being
By William Davies

'Happiness is the ultimate goal because it is self-evidently good. If we are asked why happiness matters we can give no further external reason. It just obviously does matter.' This pronouncement by Richard Layard, an economist and advocate of 'positive psychology', summarises the beliefs of many people today. For Layard and others like him, it is obvious that the purpose of government is to promote a state of collective well-being. The only question is how to achieve it, and here positive psychology - a supposed science that not only identifies what makes people happy but also allows their happiness to be measured - can show the way. Equipped with this science, they say, governments can secure happiness in society in a way they never could in the past.

It is an astonishingly crude and simple-minded way of thinking, and for that very reason increasingly popular. Those who think in this way are oblivious to the vast philosophical literature in which the meaning and value of happiness have been explored and questioned, and write as if nothing of any importance had been thought on the subject until it came to their attention. It was the philosopher Jeremy Bentham (1748-1832) who was more than anyone else responsible for the development of this way of thinking. For Bentham it was obvious that the human good consists of pleasure and the absence of pain. The Greek philosopher Aristotle may have identified happiness with self-realisation in the 4th century BC, and thinkers throughout the ages may have struggled to reconcile the pursuit of happiness with other human values, but for Bentham all this was mere metaphysics or fiction. Without knowing anything much of him or the school of moral theory he established - since they are by education and intellectual conviction illiterate in the history of ideas - our advocates of positive psychology follow in his tracks in rejecting as outmoded and irrelevant pretty much the entirety of ethical reflection on human happiness to date.

But as William Davies notes in his recent book *The Happiness Industry*, the view that happiness is the only self-evident good is actually a way of limiting moral inquiry. One of the virtues of this rich, lucid and arresting book is that it places the current cult of happiness in a well-defined historical framework. Rightly, Davies begins his story with Bentham, noting that he was far more than a philosopher. Davies writes, 'Bentham's activities were those which we might now associate with a public sector management consultant'. In the 1790s, he wrote to the Home Office suggesting that the departments of government be linked together through a set of 'conversation tubes', and to the Bank of England with a design for a printing device that could produce unforgeable banknotes.

He drew up plans for a 'frigidarium' to keep provisions such as meat, fish, fruit and vegetables fresh. His celebrated design for a prison to be known as a 'Panopticon', in which prisoners would be kept in solitary confinement while being visible at all times to the guards, was very nearly adopted. (Surprisingly, Davies does not discuss the fact that Bentham meant his Panopticon not just as a model prison but also as an instrument of control that could be applied to schools and factories.)

Bentham was also a pioneer of the 'science of happiness'. If happiness is to be regarded as a science, it has to be measured, and Bentham suggested two ways in which this might be done. Viewing happiness as a complex of pleasurable sensations, he suggested that it might be quantified by measuring the human pulse rate. Alternatively, money could be used as the standard for quantification: if two different goods have the same price, it can be claimed that they produce the same quantity of pleasure in the consumer. Bentham was more attracted by the latter measure. By associating money so closely to inner experience, Davies writes, Bentham 'set the stage for the entangling of psychological research and capitalism that would shape the business practices of the twentieth century'.

The Happiness Industry describes how the project of a science of happiness has become integral to capitalism. We learn much that is interesting about how economic problems are being redefined and treated as psychological maladies. In addition, Davies shows how the belief that inner states of pleasure and displeasure can be objectively measured has informed management studies and advertising. The tendency of thinkers such as J B Watson, the founder of behaviourism*, was that human beings could be shaped, or manipulated, by policymakers and managers. Watson had no factual basis for his view of human action. When he became president of the American Psychological Association in 1915, he 'had never even studied a single human being': his research had been confined to experiments on white rats. Yet Watson's reductive model is now widely applied, with 'behaviour change' becoming the goal of governments: in Britain, a 'Behaviour Insights Team' has been established by the government to study how people can be encouraged, at minimum cost to the public purse, to live in what are considered to be socially desirable ways.

Modern industrial societies appear to need the possibility of ever-increasing happiness to motivate them in their labours. But whatever its intellectual pedigree, the idea that governments should be responsible for promoting happiness is always a threat to human freedom.

* 'behaviourism': a branch of psychology which is concerned with observable behaviour

Questions 27-29

Choose the correct letter, A, B, C or D.

Write the correct letter in boxes 27-29 on your answer sheet.

27 What is the reviewer's attitude to advocates of positive psychology?

- A They are wrong to reject the ideas of Bentham.
- B They are over-influenced by their study of Bentham's theories.
- C They have a fresh new approach to ideas on human happiness.
- D They are ignorant about the ideas they should be considering.

28 The reviewer refers to the Greek philosopher Aristotle in order to suggest that happiness

- A may not be just pleasure and the absence of pain.
- B should not be the main goal of humans.
- C is not something that should be fought for.
- D is not just an abstract concept.

29 According to Davies, Bentham's suggestion for linking the price of goods to happiness was significant because

- A it was the first successful way of assessing happiness.
- B it established a connection between work and psychology.
- C it was the first successful example of psychological research.
- D it involved consideration of the rights of consumers.

Questions 30-34

Complete the summary using the list of words A-G below.

Write the correct letter, A-G, in boxes 30-34 on your answer sheet.

Jeremy Bentham

Jeremy Bentham was active in other areas besides philosophy. In the 1790s he suggested a type of technology to improve 30 _____ for different Government departments. He developed a new way of printing banknotes to increase 31 _____ and also designed a method for the 32 _____ of food. He also drew up plans for a prison which allowed the 33 _____ of prisoners at all times, and believed the same design could be used for other institutions as well. When researching happiness, he investigated possibilities for its 34 _____, and suggested some methods of doing this.

- | | | |
|----------------|---------------|------------------|
| A measurement | B security | C implementation |
| D profits | E observation | F communication |
| G preservation | | |

Questions 35-40

Do the following statements agree with the claims of the writer in Reading Passage 3?

In boxes 35-40 on your answer sheet, write

YES if the statement agrees with the claims of the writer

NO if the statement contradicts the claims of the writer

NOT GIVEN if it is impossible to say what the writer thinks about this

- 35 One strength of The Happiness Industry is its discussion of the relationship between psychology and economics.
- 36 It is more difficult to measure some emotions than others.
- 37 Watson's ideas on behaviourism were supported by research on humans he carried out before 1915.
- 38 Watson's ideas have been most influential on governments outside America.
- 39 The need for happiness is linked to industrialisation.
- 40 A main aim of government should be to increase the happiness of the population.

答案:

第一课

第一篇

- 27 eye movements
- 28 language co-activation
- 29 Stroop Task
- 30 conflict management
- 31 cognitive control

第二篇

- 37 heat
- 38 leaf litter
- 39 screen
- 40 alcohol

第三篇

- 8 NO
- 9 YES
- 10 NO
- 11 YES
- 12 NOT GIVEN
- 13 YES

第四篇

AC

第二课

第一篇

- 27 E
- 28 B
- 29 A
- 30 F
- 31 B
- 32 NOT GIVEN
- 33 FALSE
- 34 NOT GIVEN
- 35 TRUE
- 36 FALSE

- 37 TRUE
38 B
39 A
40 D

第二篇

- 27 vi
28 iv
29 ii
30 vii
31 i
32 v

第三篇

- 27 D
28 B
29 G
30 C
31 B
32 E
33 A
34 F