

令和3年度

英語

問題冊子

I 次の文章を読んで、問1～問5に答えなさい。\*の付された語については下に注がある。

The science of pure mathematics, in its modern developments, may claim to be the most original creation of the human spirit. Another claimant for this position is music. But we will put aside all rivals, and consider the ground on which such a claim can be made for mathematics. (1)The originality of mathematics consists in the fact that in mathematical science connections between things are exhibited which, apart from the agency of human reason, are extremely unobvious. The ideas, in the minds of contemporary mathematicians, lie very remote from any notions which can be immediately derived by perception through the senses; unless it be perception stimulated and guided by antecedent mathematical knowledge. This is the thesis which I proceed to exemplify.

Suppose we project our imagination backwards through many thousands of years, and endeavour to realize the simple-mindedness of even the greatest intellects in those early societies. Take the question of number. We think of the number 'five' as applying to appropriate groups of any entities whatever—to five fishes, five children, five apples, five days. Thus in considering the relations of the number 'five' to the number 'three,' we are thinking of two groups of entities, one with five members and the other with three members. But we are entirely abstracting from any consideration of any particular entities, or even of any particular sorts of entities, which go to make up the membership of either of the two groups. We are merely thinking of those relationships between those two groups which are entirely independent of the individual essences of any of the members of either group. This is a very remarkable feat of abstraction; and it must have taken ages for the human race to rise to it. During a long period, groups of fishes will have been compared to each other in respect to their multiplicity, and groups of days to each other. But the first man who noticed the analogy between a group of seven fishes and a group of seven days made a notable advance in the history of thought. (2)He was the first human being who entertained a concept belonging to the science of pure mathematics. At that moment it must have been impossible for him to foresee the complexity and subtlety of these abstract mathematical ideas which were waiting for discovery. Nor could he have guessed that these notions would exert a widespread fascination in each succeeding generation.

Even now there is a very wavering grasp of the true position of mathematics as an element in the history of thought. I will not go so far as to say that to construct a history of thought without profound study of the mathematical ideas of successive epochs is like omitting Hamlet\* from the play which is named after him. That would be claiming too much. But it is certainly

analogous to cutting out the part of Ophelia\*. This simile is strikingly exact. For Ophelia is quite essential to the play, she is very charming,—and a little mad. Let us grant that the pursuit of mathematics is a divine madness of the human spirit, <sup>(3)</sup>a refuge from the annoying urgency of contingent happenings.

The point of mathematics is that in it we have always got rid of the particular instance, and even of any particular sorts of entities. So long as you are dealing with pure mathematics, you are in the realm of complete and absolute abstraction. <sup>(4)</sup>All you assert is, that reason insists on the admission that, if any entities whatever have any relations which satisfy such-and-such purely abstract conditions, then they must have other relations which satisfy other purely abstract conditions. So far is this view of mathematics from being clear, that we can easily assure ourselves that it is not, even now, generally understood. For example, it is habitually thought that the certainty of mathematics is a reason for the certainty of our geometrical knowledge of the space of the physical universe. This is a mistaken belief which has spoiled much philosophy in the past, and some philosophy in the present. This question of geometry is of some urgency. So far as our observations are concerned, we are not quite accurate enough to be certain of the exact conditions regulating the beings we come across in nature. But we can by a slight stretch of hypothesis identify these observed conditions with some one set of the purely abstract geometrical conditions. In the pure mathematics of geometrical relationships, we say that, if *any* group entities enjoy *any* relationships among its members satisfying *this* set of abstract geometrical conditions, then such-and-such additional abstract conditions must also hold for such relationships. But when we come to physical space, we say that some definitely observed group of physical beings enjoys some definitely observed relationships among its members which do satisfy this above-mentioned set of abstract geometrical conditions. We conclude that the additional relationships which we concluded to hold in *any* such case, must therefore hold in *this particular* case. The certainty of mathematics depends upon its complete abstract generality. <sup>(5)</sup>But we can have no self-evident certainty that we are right in believing that the observed beings in the concrete universe form a particular instance of what falls under our general reasoning.

(Alfred North Whitehead, *Science and the Modern World* 適宜改変)

[注]

Hamlet : the title character of William Shakespeare's tragedy *Hamlet, Prince of Denmark*

Ophelia : Hamlet's love, or his potential wife

問 1 下線をほどこした部分(1)を和訳しなさい。

問 2 下線をほどこした部分(2)を和訳しなさい。

問 3 下線をほどこした部分(3)には *refuge* が用いられている。なぜ *refuge* であるのかを日本語で説明しなさい。

問 4 下線をほどこした部分(4)を和訳しなさい。

問 5 下線をほどこした部分(5)を和訳しなさい。

II 次の文章を読んで、問1～問6に答えなさい。\*の付された語については下に注がある。

In the opening lines of Richard Dawkins' *Unweaving the Rainbow*, the uncompromising atheist\* and tireless advocate of science explains why his worldview does not, as the romantic and the religious fear, extinguish a sense of wonder or an appreciation of life.

We are going to die, and that makes us the lucky ones. Most people are never going to die because they are never going to be born. The potential people who could have been here in my place but who will in fact never see the light of day outnumber the sand grains of Arabia. Certainly those unborn ghosts include greater poets than Keats, scientists greater than Newton. We know <sup>(1)</sup>this because the set of possible people allowed by our DNA so massively exceeds the set of actual people. <sup>(2)</sup>In the teeth of these stupefying odds it is you and I, in our ordinariness, that are here.

*We are going to die, and that makes us the lucky ones.* Good writing starts strong. Not with a <sup>(3)</sup>cliché ("Since the dawn of time"), not with a banality ("Recently, scholars have been increasingly concerned with the question of ..."), but with a meaningful observation that provokes curiosity. The reader of *Unweaving the Rainbow* opens the book and is struck with a reminder of <sup>(4)</sup>the most dreadful fact we know, and on its heels a paradoxical elaboration. We're lucky because we'll die? Who wouldn't want to find out how this mystery will be solved? The starkness of the paradox is reinforced by the diction and meter\*.

*Most people are never going to die.* The resolution to the paradox—that a bad thing, dying, implies a good thing, having lived—is explained with parallel constructions: *never going to die ... never going to be born.* The next sentence restates the contrast, also in parallel language, but avoids the tedium of repeating words yet again by placing side by side familiar idioms that have the same rhythm: *been here in my place ... see the light of day.*

*the sand grains of Arabia.* A touch of the poetic, better suited to the grandeur that Dawkins seeks to invoke than a colorless adjective like *massive* or *enormous*. The expression is snatched from the brink of cliché by its variant wording (*sand grains* rather than *sands*) and by its vaguely exotic feel. The phrase *sands of Arabia*, though common in the early nineteenth century, has plunged in popularity ever since, and there is no longer even a place that is commonly called Arabia; we refer to it as Saudi Arabia or the Arabian Peninsula.

*unborn ghosts.* A vivid image to convey the abstract notion of a mathematically possible combination of genes, and a wily repurposing of a supernatural concept to advance a naturalistic argument.

*greater poets than Keats, scientists greater than Newton.* Parallel wording is a powerful expression, but after dying and being born, being here in my place and seeing the light of day, enough is enough. To avoid <sup>(5)</sup>monotony Dawkins inverts the structure of one of the lines in this couplet.

*In the teeth of these stupefying odds.* The idiom, which means “in spite of,” brings to mind the menacing gape of a predator, reinforcing our gratitude for being alive: to come into existence we narrowly escaped a mortal threat, namely the high odds against it. How high? Every writer faces the challenge of finding a strong modifier in the English vocabulary that has not been inflated by hyperbole and overuse. *In the teeth of these incredible odds? In the teeth of these awesome odds?* Dawkins has found a modifier—to render into a stupor, to make stupid—that still has the power to impress.

Good writing can flip the way the world is perceived, like the silhouette in psychology textbooks which alternates between a goblet and two faces. <sup>(6)</sup>In six sentences Dawkins has flipped the way we think of death, and has stated a rationalist’s case for an appreciation of life in words so stirring that many humanists I know have asked that it be read at their funerals.

(Steven Pinker, *The Sense of Style* 適宜改変)

[注]

atheist : a person who believes that God does not exist

meter : the rhythm of a word or set of words, consisting of a pattern of weak and strong syllables

問1 下線部(1)が指す内容を、日本語で具体的に書きなさい。

問2 下線をほどこした部分(2)を和訳しなさい。

問3 下線部(3)の意味にもっとも近い語を、以下のア～エから選び、記号で答えなさい。

ア commonplace      イ folklore      ウ metaphor      エ tautology

問4 下線をほどこした部分(4)が指す内容を、日本語で具体的に書きなさい。

問5 下線部(5)の意味にもっとも近い語を、本文中から抜き出しなさい。

問6 下線をほどこした部分(6)を和訳しなさい。

Ⅲ 次の文章を読んで、問1～問5に答えなさい。\*の付された語については下に注がある。

The garden, when Penelope came here, was a wilderness, but that had been part of the fun. She was a manic gardener and spent every spare moment of her days out of doors, clearing weeds, digging beds, cutting out dead wood, planting, taking cuttings, raising seeds. Now, after five years, she was able to stand there and gloat\* over the fruits of her labour. And did so, forgetting the time. She often did this. Time had lost its importance. That was one of the good things about getting old: you weren't perpetually in a hurry. (1)All her life, Penelope had looked after other people, but now she had no one to think about but herself. There was time to stop and look, and, looking, to remember. (2)Visions widened, like views seen from the slopes of a painfully climbed mountain, and having come so far, it seemed ridiculous not to pause and enjoy them.

Of course, age brought its other horrors. Loneliness and sickness. People were always talking about the loneliness of old age, but (3)Penelope relished her solitude. She had never lived alone before, and at first had found it strange, but gradually had learned to accept it as a blessing and to indulge herself in all sorts of reprehensible\* ways, like getting up when she felt like it, scratching herself if she itched, sitting up until two in the morning to listen to a concert. And food was another thing. All her life she had cooked for her family and friends and she was an excellent cook, but she discovered, as time went by, an underlying penchant\* for the most disgusting snacks. Baked beans eaten cold, with a teaspoon, out of the tin. Bottled salad cream spread over her lettuce, and a certain sort of pickle which she would have been ashamed to set on her table in the old days of Oakley Street.

Even sickness brought (4)its own compensations. (5)Ever since that small hiccup of a month ago, which the stupid doctors insisted on calling a heart attack, she had become, for the first time in her life, aware of her own mortality. This was not frightening, for she had never been afraid of death, but it had sharpened her perceptions, and reminded her sharply of what the church calls the sins of omission. She was not a religious woman, and she did not brood on her sins, which had probably, from the church's point of view, been legion\*, but she did start counting up the things that she had never done. Along with fairly impractical fantasies like trekking the mountains of Bhutan, or crossing the Syrian desert to visit the ruins of Palmyra, which she accepted now that she would never do, was the yearning desire, almost a compulsion, to go back to Cornwall.

(Rosamunde Pilcher, *The Shell Seekers* 適宜改変)

[注]

gloat : to be happy about your own success

reprehensible : deserving blame

penchant : a special liking for something

legion : very many

問1 下線をほどこした部分(1)を和訳しなさい。

問2 下線をほどこした部分(2)を和訳しなさい。

問3 下線をほどこした部分(3)の内容を, 例を挙げて述べた箇所がある。その例を日本語で要約しなさい。

問4 下線をほどこした部分(4)の内容を, 日本語で説明しなさい。

問5 下線をほどこした部分(5)を和訳しなさい。



IV 次の文章を英語で表現しなさい。

面白いのは、試験の方式が変更されてそれが定着すると、選ばれてくる人材の質的变化が起こることである。例えば、口頭試問では機知と度胸がものをいい、内気な人間には不利になるだろう。評価の仕方は選ばれてくる人間の性向を支配し、その継続によってその集団のカルチャーもそれに染まってくる。最近、筆記試験偏重はダメで、ディベートなどの重要性が説かれている。案外こういうことが、組織や学問の傾向を決めているのかもしれない。

(佐藤文隆『科学と人間』適宜改変)

問題は、このページで終わりである。

