

# 平成23年度 推薦入試 基礎学力検査

## 数 学

### 注 意 事 項

1. 基礎学力検査開始の合図があるまで、この問題冊子と解答冊子を開かないください。
2. 問題は全部で4問あります(1ページから2ページ)。ページ番号のついていない紙は下書き用紙です。
3. 解答冊子の中には、解答用紙12枚と計算用紙が一緒にとじてあります。解答冊子のどのページも切り離してはいけません。
4. 解答冊子の表紙の所定欄に氏名と受験番号を、解答用紙の所定欄には受験番号をはっきりと記入してください。
5. 基礎学力検査中に問題冊子の印刷不明瞭、ページの落丁・乱丁および解答用紙の汚れ等に気がついた場合は、静かに手を上げて監督員に知らせてください。
6. 基礎学力検査終了後、問題冊子は持ち帰ってください。
7. 解答時間は90分です。
8. 設問ごとに配点が記されています。
9. 解答用紙には、答えだけでなく、結論に至る過程を必ず記述してください。

I 以下の問いに答えよ．（配点 40 点）

問 1 3 次方程式  $x^3 - 2x^2 + 2x - 1 = 0$  を複素数の範囲で解け．

問 2 問 1 の 3 次方程式の 3 つの解を  $\alpha, \beta, \gamma$  とするとき， $\alpha - 1, \beta - 1, \gamma - 1$  を解にもつ 3 次方程式  $x^3 + px^2 + qx + r = 0$  の定数  $p, q, r$  の値を求めよ．

問 3 問 1 の 3 次方程式の 3 つの解を  $\alpha, \beta, \gamma$  とするとき， $\frac{1}{\alpha} + 1, \frac{1}{\beta} + 1, \frac{1}{\gamma} + 1$  を解にもつ 3 次方程式  $x^3 + p'x^2 + q'x + r' = 0$  の定数  $p', q', r'$  の値を求めよ．

II 2 次関数  $f(x) = -x(x - 2)$  を考える．放物線  $y = f(x)$  上に， $y$  座標が正の点 P をとり，原点と点 P を結ぶ直線を  $\ell$  と表す．以下の問いに答えよ．（配点 40 点）

問 1 直線  $\ell$  と放物線  $y = f(x)$ ，および  $x$  軸で囲まれる図形の面積を  $S_1$  とする．直線  $\ell$  と放物線  $y = f(x)$  のみで囲まれる図形の面積を  $S_2$  とする． $S_1 = 7S_2$  となるとき，点 P の座標を求めよ．

問 2 問 1 で求めた点 P における  $y = f(x)$  の接線を  $m$  とする．接線  $m$  と放物線  $y = f(x)$ ，および  $y$  軸で囲まれる図形の面積を求めよ．

III 平面上のベクトル  $\vec{OA} = (1, 1)$ ,  $\vec{OB} = (2, 0)$  を考える.  $s, t$  を実数とし,  $\vec{OP}$  が  $\vec{OP} = s\vec{OA} + t\vec{OB}$  と表されるとき, 以下の問いに答えよ. (配点 40 点)

問1  $s, t$  が,  $s \geq 0, t \geq 0, s + t \leq 1$  を満たしながら動くとき, 点 P が存在する範囲を図示せよ.

問2  $s, t$  が,  $s \geq 0, t \leq 0, s - t \leq 1$  を満たしながら動くとき, 点 P が存在する範囲を図示せよ. 必要ならば,  $\vec{OP} = s\vec{OA} + (-t)(-\vec{OB})$  を用いてよい.

問3  $s, t$  が,  $|s + t| \leq 1, |s - t| \leq 1$  を満たしながら動くとき, 点 P が存在する範囲を図示せよ.

IV 数直線上を動く点 P が原点の位置にある. 硬貨を 1 枚投げて, 表が出たら点 P は正の向きに 1 だけ進み, 裏が出たら負の向きに 1 だけ進む. 硬貨を 10 回投げたとき, 以下の問いに答えよ. (配点 30 点)

問1 点 P の座標が 4 であるとき, 硬貨の表が出た回数を答えよ.

問2 点 P の座標が 4 である確率を求めよ.

問3 点 P の座標が 3 である確率を求めよ.

問4 点 P の座標が  $-8$  である確率を求めよ.

問題は, このページで終了である.

# 2011 Entrance Exam (Achievement Test)

for recommended applicants

平成 23 年度 推薦入試 基礎学力検査

English

英語

## 注意事項

1. 基礎学力検査開始の合図があるまで、この問題冊子と解答冊子を開かないでください。
2. 問題は 1～6 ページにあります。ページの番号のついていない紙は下書き用紙です。
3. 解答冊子の中には、解答用紙 2 枚と下書き用紙と一緒に綴じてあります。解答冊子のどのページも切り離してはいけません。
4. 解答冊子の表紙の所定欄に氏名と受験番号を、解答用紙の所定欄には受験番号をはっきりと記入してください。
5. 基礎学力検査中に問題冊子の印刷不明瞭、ページの落丁・乱丁および解答用紙の汚れ等に気がついた場合は、静かに手を上げて監督員に知らせてください。
6. 基礎学力検査終了後、問題冊子は持ち帰ってください。
7. 解答時間は 60 分です。
8. 辞書を使用することができます。
9. 設問ごとに配点が記されています。

## Part 1 Reading Comprehension

次の文章を読み，以下の問いに答えよ．(配点 70 点)

### Plagiarism and the Internet

The act of copying another person's ideas or writing has existed since humans have been able to think and write. In fact, the transcribing of speech and copying of documents has been the most efficient way of keeping records and transmitting information. Thus, copying is not necessarily a bad activity. It becomes bad when someone makes it appear that the words and ideas they have copied are their own. This is a kind of fraud, which is called plagiarism. The Collins Cobuild Dictionary for Advanced Learners (2001) defines plagiarism as "the practice of using or copying someone else's idea or work and pretending that you thought of it or created it."

So what is wrong with plagiarism? Just as taking someone else's property and claiming that it is your own is stealing, plagiarism is stealing someone else's words and ideas. For people in academic institutions such as universities who are working to advance knowledge by publishing original ideas, this act of theft is especially bad. When people plagiarise, they are taking away credit from the original writer. This can be particularly harmful to the academic careers of those who publish new ideas.

With the advent of the Internet, Jude Carroll notes that "students didn't need to start their essays with a blank screen. Other people's words could be easily imported."<sup>1)</sup> In other words, the Internet and search engines have made plagiarism much easier to commit. When you are online, you are never more than just a few mouse clicks away from an article about almost anything. Copying this information from a web page to your word processor has become very easy.

Accurate statistics of the number of students that plagiarise are hard to find: official figures only include the number of students that have been caught, and people do not readily admit to this misdeed. In 2008, the Guardian Newspaper reported that about 7 in every 1,000 British students had plagiarised.<sup>2)</sup> This year, the New York Times reported that 61% of 14,000 undergraduates admitted to cheating on assignments and exams.<sup>3)</sup>

①The Internet has not only made plagiarism easier, but also it has changed the way people treat information. Digital data (text, movies or images) can be copied, re-edited and combined together and then published online. Students regularly see these “mashed up” creations, and maybe even create mashups themselves. As a result, they come to think that copying text, and pretending that it is their own is acceptable.

However, the big difference between mashups and university essays is that with a mashup the creator does not get credit for the original material, but may be praised for the way he has recombined the data. In the case of a university essay, a student gets credit for the words and ideas because it is assumed that they are his or her own. However, if the student has copied these words and ideas, and acts as if they are original, the student is guilty of plagiarism and should be punished.

### References:

- 1) Jack, I. “After 1998 students didn’t need to begin essays with a blank screen”. 28 June 2008. In the online Guardian newspaper. Accessed August 2010:  
<http://www.guardian.co.uk/commentisfree/2008/jun/28/highereducation>
- 2) Lipsett, A. “Cheating rife among university students, research shows”. 2 June 2008. In the online Guardian newspaper. Accessed August 2010:  
<http://www.guardian.co.uk/education/2008/jun/02/highereducation.uk>
- 3) Trip, G. “To Stop Cheats, Colleges Learn Their Trickery”. July 5, 2010. In the online New York Times newspaper. Accessed August 2010:  
<http://www.nytimes.com/2010/07/06/education/06cheat.html>

(1)

次の(ア)~(オ)のそれぞれの文について，その内容が本文で著者が述べていることと一致するものには ，一致しないものには×をつけよ。(配点15点)

- (ア) Copying text is cheating when you act as if the ideas in the text are your own.
- (イ) Mashups and university essays should be treated in the same way.
- (ウ) Plagiarism is an acceptable activity in universities.
- (エ) Seven percent of British students are guilty of plagiarism.
- (オ) The Internet has changed the way people use information.

(2)

次の(ア)~(エ)のそれぞれの行為の中で本文で述べている“plagiarism”となるのはどれか。“plagiarism”となる行為を一つを選び，その記号で答えよ。(配点10点)

- (ア) A student copies some text from a book and adds it to her essay. In her essay, she marks the text that has been copied, and indicates where the text was found and who wrote it.
- (イ) A student hands in a composition in which three sentences of the text have been copied from a web page. There is no reference to the original author of these words.
- (ウ) A student copies some notes taken by his friend in a lecture. He makes a note of who gave the lecture and who made the original notes.
- (エ) A student finds some data in a web site. He uses this data in an essay, and acknowledges the source of this data.

(3)

次の(ア)～(エ)の中で本文で述べている“mashup”となるのはどれか。“mashup”となるものを一つを選び、その記号で答えよ。(配点 10 点)

- (ア) An essay written by a student in which the text has been copied from various books, journals and web sites.
- (イ) A famous feature-length movie that has been uploaded to the Internet for people to download and watch for free.
- (ウ) A section in a book that contains an interesting comment made by an academic. At the end of the quote is a reference to the original author.
- (エ) A short video created by mixing sections of some music videos made by well-known artists and a homemade soundtrack.

(4)

著者によると、なぜ大学において plagiarism の行為は特に悪いのか。その理由として最も適切と考えられるものを、次の(ア)～(エ)の選択肢の中から一つを選び、記号で答えよ。(配点 10 点)

- (ア) The author believes that the creation of original ideas is at the centre of university life, and therefore other peoples' ideas should always be recognised.
- (イ) Plagiarism should not be accepted in universities because it encourages students to mix digital sources into new works which they then put online.
- (ウ) The author believes plagiarism is bad because at least 60% of students admit to copying other people's ideas and words.
- (エ) The author does not think plagiarism is bad because only 0.007% of students have been caught for cheating on assignments and exams.



(5)

本文の要約(要旨)として最も適切と考えられるものを, 次の(ア)~(エ)の選択肢の中から一つを選び, 記号で答えよ。(配点 15 点)

- (ア) Copying other people's words or ideas is a misdeed to which few people admit. The Internet has made copying even easier because it is possible to find web pages about almost any topic. This bad practice is the same as recombining digital material into new works. Students who copy and mash up should be punished.
- (イ) Plagiarism is the same as stealing. Instead of the theft of property it is the theft of an ideas and words. Also like theft, plagiarism is illegal and people who commit plagiarism should be punished like a thief. The Internet has made it much easier to discover students who plagiarise, so we can expect instances of plagiarism to decrease.
- (ウ) If someone acts as if the words or ideas they have produced are their own, they are guilty of plagiarism. The Internet has made plagiarism even easier to commit. However, students need to understand that plagiarism is not the same as creating a mashup; combining multiple digital sources into a new work.
- (エ) Before the Internet existed, plagiarism was very rare. For example, fewer than 7 in 1,000 students copied other people's work. However, now as many as 60% of students copy other students' words and ideas and pretend they are their own. They do this because they see examples of plagiarism online every day.

(6)

本文中の下線部①を和訳せよ。(配点 10 点)

## Part 2 Personal Response to the Writing

Part 1 では盗作（剽窃）について述べられていた。これについて、以下の問いに英語で答えよ。ただし、解答は英文として明瞭かつ論理的に表現されていれば、どのような立場のものでも可とするが、箇条書きのような書き方をせずに、必ず完全な英語の文章で答えること。（配点 30 点）

- (1) In your opinion, what is the main advantage and main disadvantage of the Internet for university students? Write two paragraphs. (about 100-150 words total) (配点 15 点)

- (2) In your opinion, what are three functions of universities? Explain your answers. Write one paragraph. (about 100-150 words) (配点 15 点)