University of St.Gallen

HSG admission test

The test does not examine knowledge but aptitude. The decisive factors are your intellectual capacity, your creativity and your problem-solving skills.

Written examination

The admission test of the University of St.Gallen is an aptitude test which covers questions within the scope of a general intelligence and ability-to-study test. Since it is your analytical and cognitive faculty that is tested and since no knowledge questions are asked, there is no special need to revise for the test. The HSG does not offer any preparatory courses, nor does it make any further recommendations regarding revision and literature.

The admission test is structured into five areas: text analysis, solving quantitative problems, recognising patterns, linguistic systems, and diagrams. On the following pages entitled “Contents and problem examples”, you can find comparable problems and exercises.

Interview

The interview to which you may be invited does not require any special preparation, either. You will be required to look into your development to date, your strong and weak points, your experiences and disappointments, your motives for university studies, your goal for your studies and for your future life in a self-critical and differentiated way. The outcome will depend on the substantial quality of your comments and on your situative reactions to questions.

There are no standardised precepts for this; rather, your interlocutors expect to be able to conduct a stimulating and, above all, informative discussion with you.

Contents and problem examples

The written ability-to-study test is structured into five areas (problem groups subject to modifications).

Text analysis

You will be given texts of about ten lines in length which describe a certain situation. These are followed by two or three problems which serve to check whether you have understood the substance of this text and have drawn the right conclusions from it. This area thus covers text comprehension, deductive thinking at a verbal level, the ability to separate what is important from what is unimportant, and critical judgement (what conclusions can be drawn from the information on the page without any additional assumptions?).

Solving quantitative problems

You will have to solve simple quantitative problems; sometimes, simple processes from economic and everyday life which are described in words have to be translated into a mathematical equation. This examines deductive thinking in the numerical field and confidence in the application of the basic rules of arithmetic and algebra. What is important is to find the right approach to a solution; complicated calculations will not be required.

Recognising patterns

Several graphic elements such as arrows, circles, triangles and squares are arranged according to certain rules in a matrix which consists of three columns and three lines. You will have to recognise these rules in order to add a missing element to the matrix. These problems do not involve language and they test logical thinking at a figural level.

Linguistic systems

In this group of problems, you will be presented with expressions and sentences both in German and in an (invented) foreign language to enable you to find out meanings of words and grammatical rules and structures that are applicable to the foreign language. On the basis of these findings, you will be expected to translate new expressions and sentences from German into the foreign language. This examines inductive thinking, the formation and testing of hypotheses, and the application of newly discovered rules to new situations.

Diagrams

You will have to analyse and interpret information from the economic and social spheres which is presented in diagrams and charts. This involves translating situations described in words into graphic forms of representation and vice versa. This particularly tests your ability to express abstract information in concrete terms and to translate concrete information into abstract representations.

Text Analysis

The following items are designed to test your ability to understand the contents of short texts and draw the right conclusions from them. To this end, you will be presented with texts related to different fields, each followed by two test items, each of which consist of two statements referring exclusively to the contents of the preceding text. For each item, you are to assess whether only the first statement, only the second statement, both statements, or neither of the two statements can be deduced from the information provided in the text.

Example item 1

A large number of developing countries have high debts with the wealthy industrial countries. The degree of the respective debt is quantified by the debt-to-equity ratio. To arrive at that ratio, the debt of the respective country is divided by its annual export revenues (both amounts in dollars). According to this calculation, Venezuela has a debt-to-equity ratio of 2.8, Chile one of 3.2, and Zambia one of 6.0.
The debts of indebted countries are traded on the so-called secondary market. The market value of the debts depends on the debtor country's financial situation, and the higher the respective country's debts, the lower the market value of those debts.

Which of the following statements can be deduced from this information?

I. Chile's annual export revenues are lower than those of Venezuela.

II. If an industrial country were to cancel part of a developing country's debts, the market value of that developing country's debts would increase.

(A) Only statement I can be deduced.
(B) Only statement II can be deduced.
(C) Both statements can be deduced.
(D) Neither of the two statements can be deduced.

Degree of difficulty: average

Explanation:

For the solution-finding process, it is important, first of all, to recognize that the debt-to-equity ratio represents a ratio between two variables. The variables themselves – namely the absolute amount of the debt and the absolute amount of the annual export revenues – are not specified in the text. Therefore nothing can be deduced about the absolute amount of either the debts or the export revenues. According to the text, Chile has a higher debt-to-equity ratio than Venezuela, but that fact cannot necessarily be attributed to lower export revenues on the part of Chile. It could – at least in part – be attributable to higher debt in Chile. Therefore statement I is not deducible.
Statement II is about a cause-and-effect chain with two "links". Assuming a portion of the debt of a developing country was cancelled, the result would be a decrease in the debt-to-equity ratio. This in turn would lead to an increase in the value of the respective country's debt. Statement II is thus correct, and the solution letter is therefore B.

Example item 2

A simple model of interpersonal communication consists of a sender, a message and a receiver. A message consists of both linguistic and non-linguistic elements (e.g. tone of voice, facial expression) and, in addition to objective information, always also contains information about the sender and the relationship between the two communicators. The information in a message can be explicit (clearly expressed in words) or implicit (conveyed without saying it directly). Implicit information is often conveyed by tone of voice or accompanying facial expressions and gestures – i.e. by non-linguistic means. If the linguistic and non-linguistic elements of a message are consistent with one another, the message is considered congruent; if these elements contradict one another the message is incongruent.

Which of the following statements can be deduced from this information?

I. If a receiver comes to the conclusion that a message he has received is incongruent, it could be because he does not have good command of the language used.

II. If someone speaks in dialect, he sends an explicit objective message.

(A) Only statement I can be deduced.
(B) Only statement II can be deduced.
(C) Both statements can be deduced.
(D) Neither of the two statements can be deduced.

Degree of difficulty: average

Explanation:

Statement I is about an incongruent message, i.e. a message in which the linguistic and non-linguistic elements are not consistent with one another. In order to decide whether the two elements are consistent with or contradictory to one another, the receiver has to understand the meaning of the linguistic element of the message correctly. This requires command of the language used by the sender. If the receiver does not have command of that language, he could – as a result of his lack of command – come to the possibly erroneous conclusion that the message he had received was incongruent. Therefore statement I is deducible.
Statement II has to do with the distinction between explicit and implicit messages. An explicit message has to be clearly expressed in words, whereas an implicit message is conveyed indirectly, for example by the manner in which a person speaks. This is the case with a dialect. Through the specific accentuation, a certain intonation, or a certain way of pronouncing syllables, a person reveals his linguistic origins in an indirect, incidental manner. If one wanted to convey the fact that one speaks in dialect in the form of an explicit message, one would say something like “I speak the X dialect” – perhaps even using the purest English to do so. Statement II is thus incorrect, and the solution letter is therefore A.

Solving Quantitative Problems

The items in the "Solving Quantitative Problems" group are verbally formulated quantitative problems of the kind that come up in everyday life, and to an extent in generally familiar areas of economics or technology. The primary aim of these items is to test your ability to think about numerical problems logically, as well as your ability to apply the basic rules of arithmetic, algebra, combinatorics and geometry. The focus is on finding the right approach to solving the problems; no complicated calculations are required.
Mark the solution letter on your answer sheet.

Example item 1

In the Backwoods University cafeteria, 10 litres of an orange juice beverage with a fruit juice content of 60 % and 15 litres of an orange juice beverage with a fruit juice content of 80 % are mixed.
How many litres of water have to be added to this mixture to create an orange juice beverage with a fruit juice content of 40 %?

(A) 18 litres
(B) 20 litres
(C) 25 litres
(D) 27 litres

Degree of difficulty: average

Explanation:

One way of solving this problem is to begin by figuring out how many litres of pure fruit juice the mixture contains. These are 60 % of 10 litres and 80 % of 15 litres, i.e. altogether 18 litres (6 plus 12 litres). These 18 litres are now to make up 40 % of the new beverage. If we divide the 18 litres by 4 and multiply the result by ten, we calculate the final amount of the orange juice beverage at 45 litres. Since until now there are only 25 litres in total (10 plus 15 litres), 20 litres of water must be added. The solution letter for this item is therefore B.

Example item 2

In a certain department of the banking house Stein & Reich, the costs C occur monthly. C equals the arithmetic average of the costs C1 and C2. In month X, C2 was four times as high as C1.
By what percentage does C change when, in the following month Y, C1 doubles and C2 decreases by half?

(A) by –20 %
(B) by –10 %
(C) by ± 0 %
(D) by +20 %

Degree of difficulty: average to high

Explanation:

There are two ways of solving this problem. The general algebraic solution is as follows:

$$C = \frac{C1 + C2}{2}$$

$$C2_X = 4C1_X$$

$$C_X = \frac{C1_X + 4C1_X}{2} = 2.5C1_X$$

$$C_Y = \frac{C1_Y + C2_Y}{2}$$

$$C1_Y = 2C1_X \; ; \; C2_Y = 0.5C2_X = 2C1_X$$

$$C_Y = \frac{2C1_X + 2C1_X}{2} = 2C1_X$$

If we then compare the costs C_X and C_Y (lines 3 and 6), we see that the latter is smaller than the former by 0.5 $C1_X$, or 20 %. The solution letter is therefore A.

A faster and more elegant way of arriving at the answer, however, is to calculate the task with specific example numbers:

$$C = \frac{C1 + C2}{2}$$

$$C1_X = 1 \; ; \; C2_X = 4$$

$$C_X = \frac{1 + 4}{2} = 2.5$$

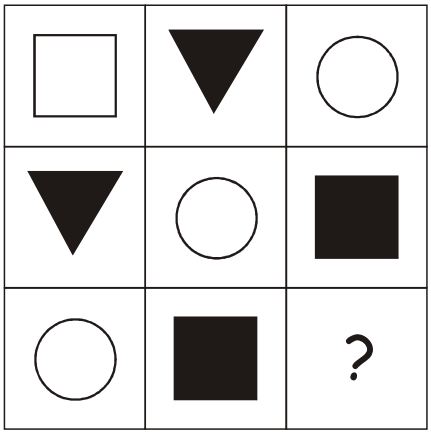
$$C1_Y = 2 \cdot 1 \; ; \; C2_Y = 0.5 \cdot 4$$

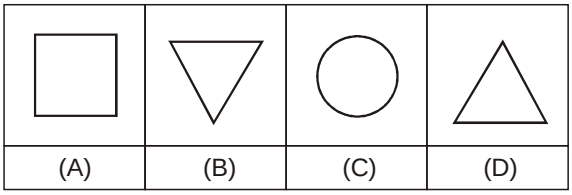
$$C_Y = \frac{2 + 2}{2} = 2$$

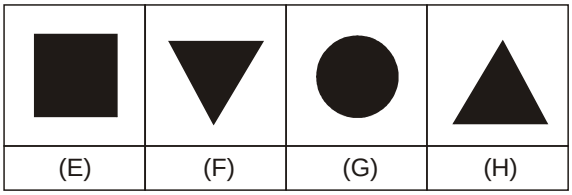
If we compare the costs C_X and C_Y on this basis, the change – as expected – is –20 %.

Recognizing Patterns

Each of the following items consists of nine fields. Eight of the fields contain figures. In the ninth field (at the bottom right) is a question mark.







The arrangement of the figures has been carried out according to certain rules. Your task is to recognize these rules and apply them in order to find the ninth figure.

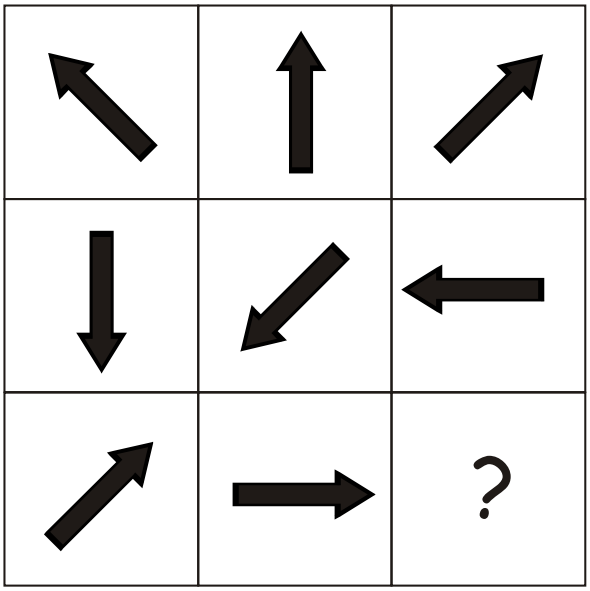
The rules apply

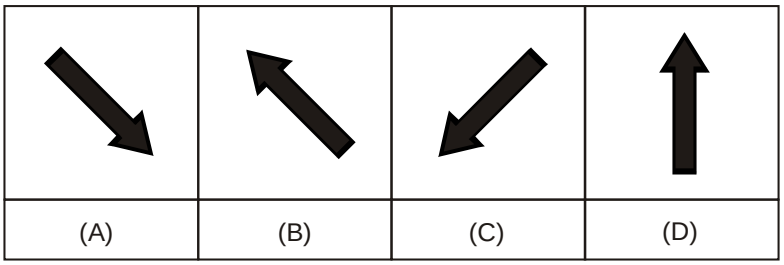
- from left to right,
- OR from top to bottom,
- OR from left to right AND from top to bottom.

There are no other directions (e.g. diagonal) in which the rules can apply!

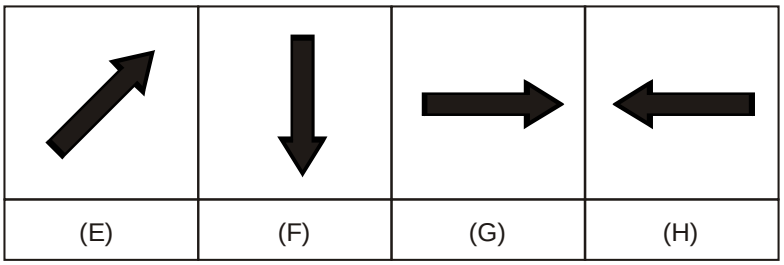
In order to solve an item, you need one, two or three rules. It is also possible that one rule applies horizontally and another rule vertically. Below the nine fields, you will find eight figures (A, B, C, D, E, F, G and H). Select the figure which should take the place of the question mark.

Item 1:





(A)	(B)	(C)	(D)



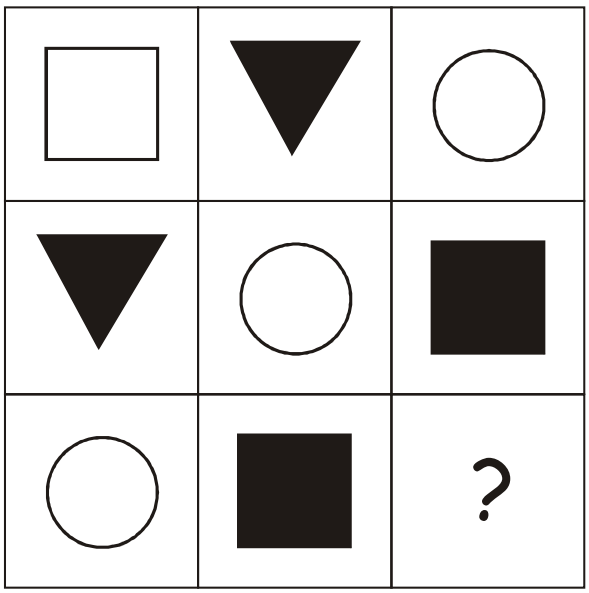
(E)	(F)	(G)	(H)

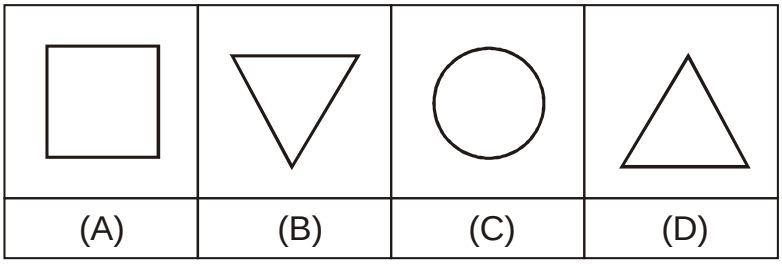
Degree of difficulty: low

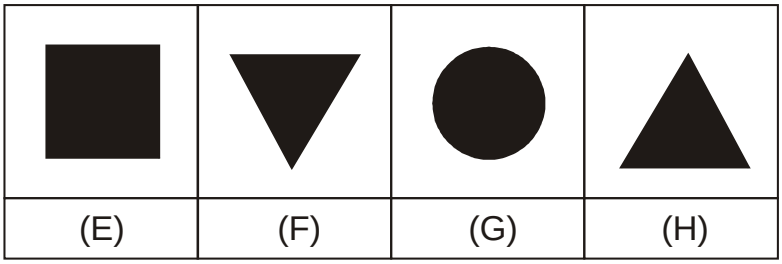
Here the rule applies from left to right. From the first field to the second field, the arrow turns 45° towards the right (clockwise). The same applies from the second field to the third field. In the place of the question mark, there should thus be an arrow pointing towards the lower right.

Therefore the solution is (A).

Item 2:







Degree of difficulty: low

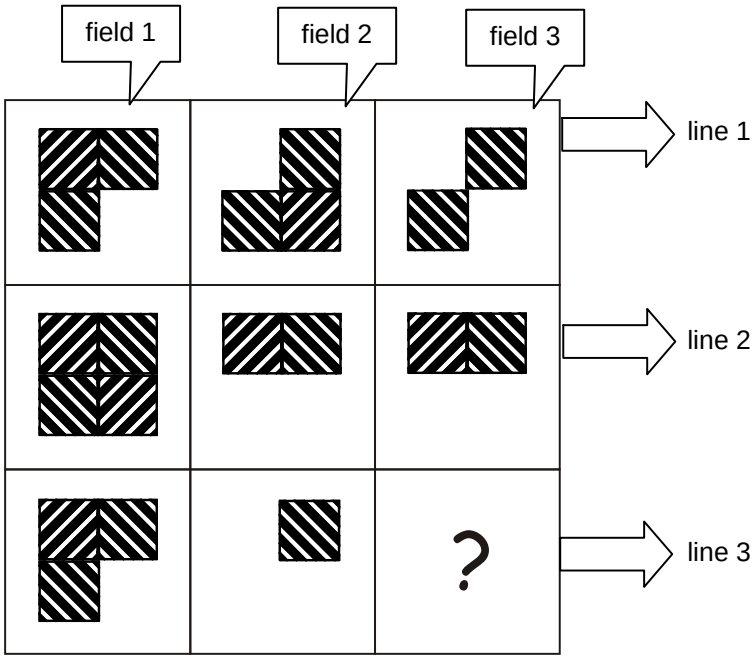
Here the rule applies from left to right and from top to bottom. In every line and column there is a square, a circle and a downward-pointing triangle. The colours alternate between black and white.

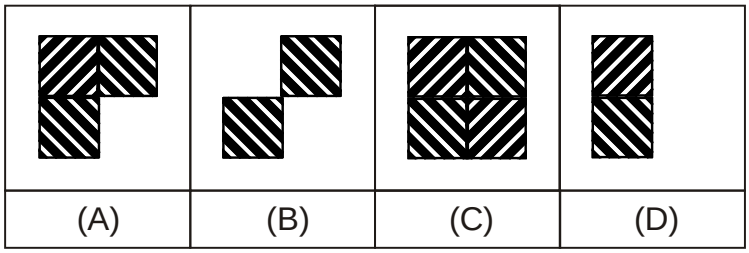
1. The forms: In the bottom line there is a circle and a square. A downward-pointing triangle is missing.

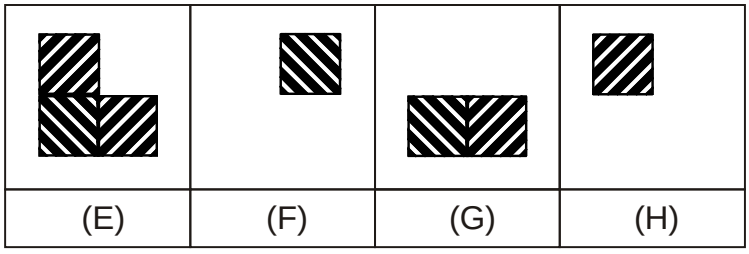
2. The colours: The circle is white; the square is black. The colour of the downward-pointing triangle therefore has to be white.

The solution is (B).

Item 3: As an aid in explaining the solution process, the fields of this item are labelled.







Degree of difficulty: average

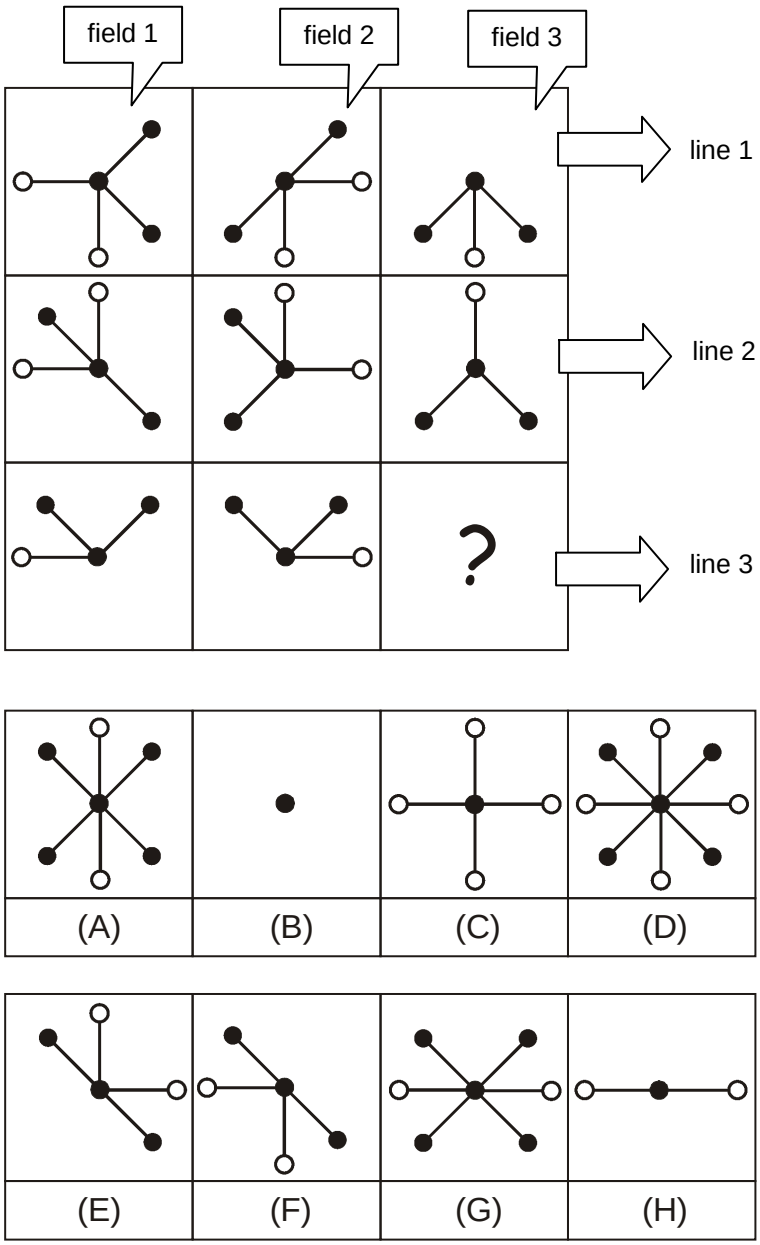
Here the rule applies from left to right and from top to bottom.

The entire figure consists of four squares, which in turn form a larger square. Each small square is observed separately. A square appears in field 3 if it is in the **same** position in field 1 and field 2. The square does not appear in field 3 if it appears only in field 1 or only in field 2. The square also does not appear if it appears neither in field 1 nor in field 2. The same rule applies to the columns.

Only the square at the upper right appears in both field 1 and field 2 of line 3.

The solution is therefore (F).

Item 4: As an aid in explaining the solution process, the fields of this item are labelled.



Degree of difficulty: high

Here the rules apply from left to right and from top to bottom.

Two different rules apply:

1. The lines with the coloured-in circles: A line appears in field 3 if it is <u>not</u> in the same position in field 1 and field 2. Please look at line 1. The line with the circle at the top right appears in field 1 and field 2. It does not appear in field 3. The line with the circle at the bottom right appears only in field 1, and the line with the circle at the bottom left appears only in field 2. In field 3 is a line with a circle at the bottom left and a line with a circle at the bottom right. Identical lines cancel each other out!

2. The lines with the blank circles: A line appears in field 3 if it is in the same position in field 1 and field 2. Please look at line 1. In field 1 there is a line with a circle at the left. In field 2 there is a line with a circle at the right. In both fields there is a line with a circle at the bottom. In field 3, only the line with the circle at the bottom appears. Differing lines cancel each other out!

In field 1 and field 2 of line 3, both lines with coloured-in circles are in the same position, so they cancel each other out. In field 3 there is accordingly no line with a coloured-in circle. The lines with blank circles are not in the same position in field 1 and field 2 so – as differing lines – they also cancel each other out.

This means: no lines with coloured-in circles, and no lines with blank circles. Therefore the solution is (B).

Linguistic Systems

In the following exercises, you will be shown several expressions in invented foreign languages and their English translation. This will allow you to derive the meaning of individual words and some grammatical rules in the respective foreign language. This information will help you answer the subsequent questions. In each case two exercises relate to a certain language. Therefore please only use the provided expressions to answer the questions.

You may proceed on the assumption that

- there are no exceptions to the rules (e.g. irregular verbs) and
- only those rules apply which may be derived from the provided expressions.

Example exercise 1

tundo ramodopo novot	=	The pupil called his uncle.
namidu kavino suvavot	=	The saleswoman greeted the teacher.
tundu kavinopu tetavosir	=	The schoolgirl is asking her teacher.
hidamo tundo nosir	=	The caretaker is scolding the pupil.

"The uncle greeted his caretaker" is expressed in the foreign language by:

(A) novot suvosir hidamo
(B) namidu hidamopu suvavot
(C) novot hidamopo suvasir
(D) ramodo hidamopo suvavot

Difficulty: medium

Answer (D) is correct since:

1. If one looks for the word "greeted" in the foreign language, one comes across "suvavot", for the word "kavino" in the second sentence must mean "teacher" (cf. the similar word in the third sentence) and "namidu" must mean "saleswoman". The latter becomes clear from this word's position in the sentence, compare the first and the third sentences.
2. "The caretaker" must hence be "hidamo". From the transition from "kavino" ("the teacher") to "kavinopu" ("her teacher") and from the ending of "ramodopo" ("his uncle") it follows that "his caretaker" must be "hidamopo".
3. What remains is the task of transforming the already identified word "ramodopo", meaning "his uncle", into a corresponding word for "the uncle". This is done by leaving off the ending "po".

Hence the sentence sought in the foreign language must be "ramodo hidamopo suvavot".

Example exercise 2

puna selveui	=	The child is coming from the hut.
puna tipveu	=	The cat is going to the hut.
lom fanveui	=	The farmer is coming from the field.
borro selveu	=	The child is walking to the meadow.

“The child is walking to the field” is expressed in the foreign language by:

(A) lom selveui
(B) lom selveu
(C) lom fanveu
(D) puna selveu

Difficulty: medium to high

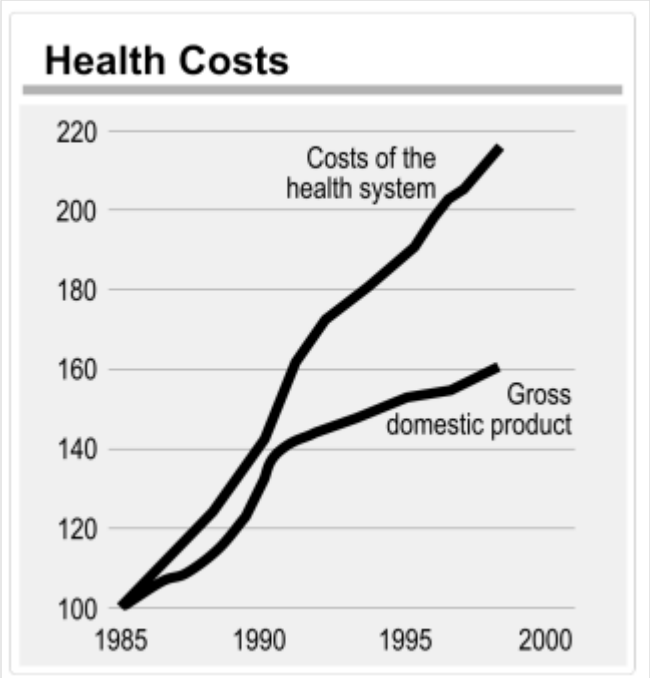
1. In this exercise one must first recognize that in the foreign language it is only the end syllable of the second word which stands for “come”, “go” or “walk” respectively.
2. On closer inspection of the expressions, it becomes clear that only the letters “veu” can have the meaning of “going somewhere”. By contrast, the verb form with an attached “i” describes “coming from somewhere”. A comparison between the first and fourth expressions shows that the extension of “veu” to “selveu” and from “veui” to “selveui” has the meaning of “the child is going to” and “the child is coming from” respectively.
3. From the second and fourth expressions one can now work out that “tip” must mean “cat” and “fan” must mean “farmer”.
4. By comparing the first and second expressions, one finds that the word for “hut” in the foreign language is “puna”. From expressions three and four it can then be seen that “lom” means “field” and “borro” is the word for “meadow”.
   “The child is walking to the field” can hence only be “lom selveu” in the foreign language.

This means B is the correct solution in this exercise.

Diagrams

The following items test your ability to analyze and interpret diagrams and charts correctly. The illustrations contain information from the areas of economics and society, depicted in graphic form. All values are plotted linearly unless otherwise specified.
Mark the correct answer to each item on the attached answer sheet. No specialized knowledge is required to answer the questions; all necessary information is included in the item.

01. The following graph compares the development of Switzerland's gross domestic product (as a measure how the national economy performed) with the development of health costs, which are a part of the gross domestic product. The levels of the GDP and the health costs are set at 100 for the year 1985 and for the following years they are shown as percentages in relation to the year 1985.



Which of the following statements can be deduced from this information?

I. In the period depicted, the health costs more than doubled.

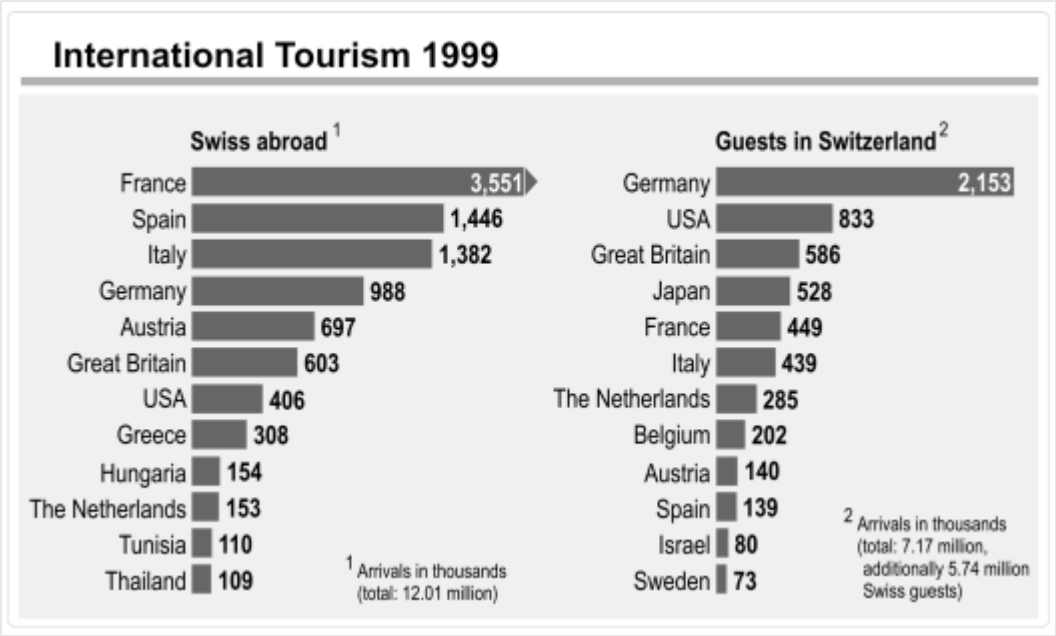
II. The share of the gross domestic product accounted for by health costs increased constantly in the period depicted.

(A) Only statement I can be deduced.
(B) Only statement II can be deduced.
(C) Both statements can be deduced.
(D) Neither of the two statements can be deduced.

Commentary:

In this moderately difficult item, two statements about the development of the costs of the Swiss health system have to be assessed.
In order to recognize that the first statement is deducible, you need only look at one of the two curves (“Costs of the health system”). From the text you know that, in the depiction, the costs in the year 1985 are set at the value 100, and the levels in the subsequent years are shown as percentages in relation to the year 1985. (This form of depiction is quite common when the aim is to compare the development of different variables with one another, since the absolute values differ too strongly to be plotted in a single coordinate system.)
Beginning in the year 1997, the “Costs of the health system” curve reaches a level above the 200 mark. This means that – as claimed in statement I – the costs had more than doubled since 1985 (level = 100).
Statement II requires a comparison of the two curves depicted. The text informs you that the costs of the health system are included in the gross domestic product. If the share of the gross domestic product accounted for by the costs of the health system had risen constantly – as claimed in statement II –, the costs of the health system would have had to rise more sharply than the gross domestic product. This is the case for a large share of the period depicted, but from 1988 to 1990 the gross domestic product clearly rose more sharply than the costs of the health system: the scissor-shaped course taken by the two curves is interrupted in this section. Therefore statement II cannot be deduced from the information, and the letter A is to be marked on the answer sheet as the solution.

02. The following chart informs us about the countries in which the Swiss spent their holidays in 1999, and the countries from which holidaymakers came to Switzerland.



Which of the following statements can be deduced from this information?

I. In 1999 there were nearly five times as many Swiss holidaymakers in Austria as there were Austrians in Switzerland.

II. In 1999, Switzerland was the holiday country most often visited by the Swiss.

(A) Only statement I can be deduced.
(B) Only statement II can be deduced.
(C) Both statements can be deduced.
(D) Neither of the two statements can be deduced.

Commentary:

This difficult item lists the countries most popular among the Swiss as holiday destinations, while also showing the countries from which the greatest number of holidaymakers came to Switzerland in the same year.
The first statement can be assessed as deducible by comparing the respective numerical values directly: in 1999, 140,000 Austrians visited Switzerland, while 697,000 Swiss visited Austria. This corresponds to the ratio cited in statement I of “nearly five times as many”.
In order to assess statement II, relevant pieces of information from various areas of the chart must be seen in relation to one another. To begin with, it can be determined that the country most frequently visited by Swiss taking their holidays **abroad** in 1999 was France (3.551 million holidaymakers). In the other section of the chart, the footnote on the title contains the information that, in addition to the guests from abroad in 1999, there were also 5.74 million Swiss guests in their own country.
In 1999, a significantly greater number of Swiss thus took their holidays in Switzerland than in France or any other country. Statement II claims precisely that, and is therefore deducible; the answer to be marked on the answer sheet is accordingly C.

