

The competitions start annually and last from September to May, but you can enter any time during the academic year.

In Mathematics, there are three different contests, in Physics there are two. Additionally, a new contest in Informatics is launched. The conditions of the respective contests are slightly different. See below for details.

Every primary or secondary school student is eligible to participate in the competitions. Students in different grades might find the same problems but in most cases their work is evaluated within their age group, they compete with students of the same age only. Therefore, it is essential that *the paper should indicate the 1 to 12 grade of the contestant* in the current school year. The KöMaL contests are individual competitions, solutions produced by a group are not accepted. If two papers turn out to be practically identical, none of them will be marked.

## Mathematics

**C contest:** exercises for practice, easier than those in the **B** contest; 5 each month. Correct solutions worth 5 marks.  
Age groups:

- up to 10th grade students
- 11 to 12th grade students (preferably those not studying mathematics in a special advanced class. Those in advanced classes are advised to take part in the **B** contest).

**B contest:** 10 problems each month. You can send any number of solutions, but only the highest six scores are entered.

Age groups:

- up to the 8th grade
- 9th grade
- 10th grade
- 11th grade
- 12th grade

**A contest:** advanced problems, 3 each month. More demanding than the **B** contest, for those who are preparing for national or international competitions. Here there are no separate age groups.

## Physics

**M contest:** Experimental problems: One measuring task is set each month. Each of them is worth 6 points. The report must contain a description of the method, the data obtained sufficient in quantity and quality, the analysis of the data, and the estimation of the error. There are no separate age groups.

**P contest:** 10 theoretical problems each month.

Age groups:

- up to the 8th grade;
- 9th grade;
- 10th grade;
- 11th grade;
- 12th grade.

Every age group may send solutions to all kinds of problems. In the **P** contest we evaluate only 3 problems up to the 8th grade and 5 problems from 9th–12th grade.

## Informatics

Three programming problems are set each month. The solutions should be written as working programs in any high level programming language, preferably Pascal or C. Do not send .exe files! There are no separate age groups, competition is opened for everyone.

## Deadlines, addresses

The deadline of mailing or e-mailing the solutions is indicated in every issue next to the new exercises and problems. Deadlines: in Physics: 11th of the month following the publication of the current issue; in Informatics: 13th of the month following the publication of the current issue; in Mathematics: 15th of the month following the publication of the current issue. Should that be a weekend or bank holiday, the deadline is the next workday.

### Send your solutions to the following address:

KöMaL Szerkesztőség (KöMaL feladatok), Budapest Pf. 47. 1255, Hungary or by e-mail to: [solutions@komal.hu](mailto:solutions@komal.hu).

Informatics solutions are accepted via e-mail only and should be sent to the following address: [infotech@komal.hu](mailto:infotech@komal.hu).

The actual state of the contests appears on our web-site

(<http://www.komal.hu/eredm/index.e.shtml>)

and it is updated regularly. These data are not official, only for your information. The final results will appear in August on our Internet home page and in the September issue of the following academic year. The cca 10 top contestants are rewarded by a certificate in each category and this is going to be mailed to their schools, and their portraits, additionally, will be presented in the December issue and the Internet.

## Entry Form for the contests The layout of the papers:

By ordinary mail:

- Write the solutions to different problems on separate A4 sheets of paper. (This is important because different people are responsible for the marking.)
- The header of every sheet must contain the following in the upper left corner (see sample 1):
  - the letter code (A, B, C, M, P) and number of the problem in red
  - the full name and the grade of the sender
  - the name of the school and the town (and country)
  - the e-mail adress of the sender
- Fold each sheet into four separatly so that the header should appear in the front side.
- Solutions to geometry problems should include diagrams.
- Enclose with your solutions a separate sheet listing your data and the contents of your mail. See sample 2.

### Sample 1. Header of a sheet

Varga 163 Róbert, 9th grade

Révai High School, Győr

e-mail: [robi@revai.hu](mailto:robi@revai.hu)C. 593.

Varga 163 Róbert, 9th grade

Révai High School, Győr

e-mail: [robi@revai.hu](mailto:robi@revai.hu)

Denote the age of the captain by  $C$ , the age of the ship by  $S$ . When the age of the ship was  $C$ , the age of the captain was  $C - (S - C) = 2C - S$ .  
When the ship was  $2C - S \dots$

### Sample 2. Enclosed list

Varga 163 Róbert, 9th grade  
Révai High School, Győr  
I send the following 3 papers in:  
C. 591., C. 593., B. 3389.

Varga 163 Róbert, 9th grade  
Révai High School, Győr  
e-mail: [robi@revai.hu](mailto:robi@revai.hu)

By e-mail :

- Send the solutions of different problems as separate e-mail messages.
- The „subject" field of the e-mail message should contain the letter code and number of the problem.
- Additional requirements concerning the Informatics solutions
  - The solutions should be mailed separately to the following address: `infotech@komal.hu`.
  - In the first few comment lines of each program do enter the following information:
    - your name and class
    - your school.
    - your town (country)

### **The content of the papers**

It is not enough to state the answer. Results with detailed explanations only will receive full credit. (Reference to standard school math is accepted without proof.)