Rules of the Mathematical Battle (3 teams)

General

A mathematical battle is a team competition in solving mathematical problems. First, the teams receive the problem statements and solve them during a fixed time (1 hour). While solving the problems, it is forbidden to use computers, mobile phones, literature, or reference materials, and it is also not allowed to communicate with anyone except jury members. After the allotted time expires, the actual battle begins, during which the teams present (or show to the jury) their solutions according to the rules.

Throughout the entire battle, participants and jury members are obliged to treat each other with respect and abide by the rules of ethics.

The jury is the supreme interpreter of the rules of the mathematical battle and reserves the right of the final word in any controversial situation.

The team captain is appointed and announced in advance and cannot be changed during the championship.

Captains' Contest

The battle begins with the Captains' Contest (CC). The captains take designated seats isolated from their teams and are allowed to use a pen and notepad. The captains are simultaneously given one problem. The first captain to solve the problem informs the jury of their wish to present the answer. Then, with the jury's permission, they announce it. If the answer is correct, the captain becomes the winner of the CC; if the answer is incorrect, they take the last (still vacant) place. The remaining two captains are given a new problem, and the game continues according to the same scheme until the second correct solution. Thus, according to the order of solving problems in the CC, the right to choose the team's position in the tournament table (first, second, or third column) is distributed among the captains. The team whose captain first announces the first correct answer also receives **0.5 points** (in case of equal final scores, this gives the team an advantage and eliminates the need to solve a blitz problem).

The time limit for solving a problem in the CC is limited (up to 3 minutes). After this time expires, the jury offers another problem.

Tournament Table

The battle consists of three rounds. Each round corresponds to a row in the table. According to the letter distribution in the rows, each team in turn takes on the role of Opposing team (O), Reporting team (R), or Spectating team (S) according to the following scheme (points, full names of reporters, and role changes are marked in the table):

	Team 1	Team 2	Team 3
Round 1	O	R	S
Round 2	S	O	R
Round 3	R	S	O

Role Distribution

1. The captain of the Opposing team (O) challenges the Reporting team (R) on any problem from among those not yet picked during the battle.
2. The captain of the Reporting team (R) may respond in one of two ways:
   a. **Accept the challenge.** In this case, he nominates a reporter from his team who will present the solution (see Report), and the Opposing team delegates an opponent.
   b. **Request a correctness check of the challenge.** In this case, the Opposing team (O) must present the report, and the original Reporting team (R) becomes the opponent, i.e., teams O and R swap roles (the role change is marked in the tournament table).

   (b*) If the Opposing team refuses to present the report (the challenge is incorrect), it becomes the Spectating team without the right to submit a written solution (i.e., it can receive a maximum of 2 points), and the right to present the report passes to the Spectating team (S). If the Spectating team agrees to present, the game continues between teams R and S, where R nominates the opponent and S nominates the reporter(role change is recorded in the table).

   (b**) If the Spectating team also refuses to present, the round is considered completed, and points are awarded according to the rule **0-2-0**: Opposing team gets 0, original Reporting team gets 2 (for detecting a gross incorrect challenge), Spectating team gets 0.

Role of the Spectating Team

Before the report begins, the captain of the Spectating team submits a written solution of the problem to the jury. During the report, the Spectating team prepares on a separate sheet written remarks, errors, and comments on the reporter's solution; these are handed to the jury immediately after the report ends but before the opponent speaks. The Spectating team does **not** participate in oral discussion!

Reporters and Opponents

Before the report starts, the reporter (and, if necessary, one assistant) is given up to **3 minutes** to prepare report materials (necessary calculations, drawings, etc.). The report itself lasts up to **10 minutes** (the time may be extended by the jury). During this time, the reporter must present the solution and the answer (if required) as clearly and completely as possible. **No one, including jury members, may interrupt the reporter.** Team assistance and time-outs are also prohibited during the report. The report ends with the phrase: "The report is over, thank you for your attention."

After the report ends and the Spectating team's written comments are submitted, the opponent is given the floor. During the report, the opponent may take notes in their notebook; interrupting the reporter is forbidden. The opponent gives a general assessment of the report and **must** state whether the answer is correct. Up to **10 minutes** are allocated for opposition (may be extended by the jury). The opponent may ask the reporter questions, request repetition of parts of the solution, and must point out errors, inaccuracies, and logical flaws. The reporter may answer questions, state that a question is irrelevant or incorrect, or acknowledge an error. At the captain's decision, the reporting team may take a time-out to join the discussion. The jury may intervene in the dialogue, in particular removing opponent's questions deemed incorrect.

Important: The opposing team is prohibited from presenting or announcing their own solution (even partially)! The only exception is counterexamples to statements by the reporter with which the opponent disagrees — in this case, the opponent writes the counterexample on the board, and the reporter is given the right to clarify their statements.

When the opponent finishes, they thank the reporter and give one of the following verdicts:
- "The solution is completely correct."
- "The solution is generally correct, but contains the following inaccuracies…"
- "The solution is incorrect, except for…"
- "The solution is completely wrong."

After the opponent finishes, jury members may ask the reporter questions, after which the round ends. If desired, the jury comments on the work of the reporter and opponent, announces the points for all three roles, and the next round begins.

Role of Captains During the Round
During the battle, **only team captains** may communicate with the jury, announce team decisions, and challenge the reporting team on a problem.

Only the captain decides who from the team will be the reporter or opponent. Each captain has the right to take **one 2-minute time-out** during the entire battle (during opposition, observation, or discussion) to discuss necessary details. Opposing teams also receive this break. Replacing a team member at the board with another member is prohibited!

Number of Appearances at the Board
The team captain appears at the board **only** during the Captains' Contest! Each remaining team member has the right to appear at the board **exactly once**: either as a reporter, or as an opponent, or to solve a blitz problem (final stage)!

Scoring and Determining the Winner
The jury awards integer points for each role with the following restrictions:
- Reporter: 0–7 points
- Opponent and Spectator: 0–5 points each
- Sum (Reporter + Opponent) ≤ 8 points
- Sum (Reporter + Spectator) ≤ 10 points

Points for the Spectating team are awarded according to the **3+2** rule:
- 3 points for a written solution submitted to the jury (1 point only for a correct answer without justification)
- 2 points for errors and inaccuracies found during the report

After three rounds, the total points for each team are summed. The team with the highest total is declared the winner of the mathematical battle.

If two (or three) teams have the same highest score, additional **blitz problems** are used to determine the winner. A fixed time (3 minutes) is given for each blitz problem; if time runs out, the jury offers another problem.

To solve blitz problems, captains delegate the last remaining team member who has not yet appeared at the board; only pen and notepad are allowed. The team whose delegate first announces the correct answer receives **1 point**. In case of an incorrect answer, the right to answer passes to the opponents until time expires (3 minutes). The game continues until one team reaches **2 points**.

Jury

The jury is the supreme interpreter of the battle rules. The jury consists of an odd number of members who are neither team leaders nor representatives of the participating universities. The jury regulates the course of rounds and dialogue between reporter and opponent, answers questions about problem statements, makes decisions on any controversial issue, and maintains order. For prompting the reporter or violating rules, a team may be penalized **−1 point** by the jury. The jury is obliged to explain decisions that do not directly follow from the battle rules.

After the battle, the jury comments on the details of the game and, if desired, names the best reporter and best opponent.