LPR Cup Rules

1. How and where should I upload solutions? How many times can I provide my solution? What file format to choose?

- Participant provides solution through Google Classroom. We do not limit the participants in the number of attempts, but each unsuccessful attempt leads to a penalty coefficient (see paragraph 2). In addition, we do not guarantee prompt checking if incorrect solutions are sent too often (see paragraph 4). And read the rules to the end. The last point is very important.
- Solutions can be sent in pdf, png, jpeg format. It can be clear images of hand-written solutions or typed text in pdf format.

2. How many points can I get for the problem? Will evaluation criteria be published? What is the penalty coefficient?

- OMG! Evaluation criteria will not be. Deal with it.
- For each problem you can get 10 points. Points can only be obtained if the answer to the question of the problem is correct. If the problem consists of several questions, then each question is evaluated independently. The intermediate results are not rated.
- Now about the penalty coefficient. There will be a lot of boring text, so just be patient. The solution to each item of the problem will be evoluated as:

  2.1. Completely correct solution (Full). This means that the correct answer is given with an well-informed solution. In this case, the participant gets points indicated for this item in the condition of the problem, which are multiplied by the penalty coefficient, determined by the number of unsuccessful attempts for this item and the number of hints received (see the rules for calculating the coefficient below).

  2.2. Inaccurate solution (Part). This means that the solution contains small errors (arithmetic errors or erratum that do not lead to a absurd answer). In this case, a notification is sent to the participant in Google Classroom that the solution to this item contains inaccuracies and that it needs to be completed to get points for the problem. For each solution that contains inaccuracy, the final score for this item is multiplied by a penalty coefficient of 0.9

  2.3. Incorrect solution (Incorrect). The solution is incorrect from the physics aspect, contains errors in the application of physical laws, contains arithmetic errors that lead to the obviously absurd or the participant solved the wrong problem, the participant does not understand the fundamental points, etc. In this case, a notification is sent to the participant in Google Classroom that the solution to this item is incorrect and that it needs to be completed in order to get points for the assignment. For each wrong decision, the final score for this item is multiplied by a factor of 0.8.

  2.4. If the problem has more than one question and the participant sends a solution containing answers to only some of them, then each item that is unanswered is evaluated as an incorrect solution.

2.5. Each hint that was given before the participant sent a solution to this item gives an additional factor of 0.7 to the coefficient. In each text of problems, there will be the information on publishing hints date.

2.6. If the participant found an error in his solution before the solution was checked, then the participant can replace it in his personal account. In this case, the penalty coefficient is not applied.

2.7. If the coefficient for the task item becomes less than 0.1, it is taken equal to 0.1. In other words, for a completely correct solution to the problem, you are guaranteed to get at least 1 point.

2.8. Paragraph «Dream of the Jury». If the solution is typed or written so that it is impossible to understand anything in it, then such a solution is evaluated as incorrect. The degree of impossibility is determined by the subjective opinion of the jury and is not discussed.

2.9. The only way of coordination is the fact that the jury did not notice part of the participant's solution. It is important to note that this usually happens in cases falling under paragraph 2.8.

2.10. Penalty coefficients do not affect points in future rounds.

Another word. The formula for calculating points for a problem:

$$P = \sum k_i \cdot p_i,$$

where P — the total score for the task, k_i — the penalty coefficient, a p_i — the score for the ith point.

For example. There are   three questions in the assignment. The first and second questions are evaluated at 3 points each, the third question is evaluated at 4 points. Prior to the first hint, the participant sends a solution containing answers to only the first two questions. The solution to the first item of the problem is completely correct, and the solution to the second item of the problem contains inaccuracy. At this stage, the participant gets

$$P_1 = 1.0 \cdot 3 + 0.9 \cdot 0 + 0.8 \cdot 0.$$

The participant decided to wait for the first hint and sends a solution that contains the correct answer to the second paragraph and the wrong solution to the third question of the problem. As a result, the total score of the participant changes and becomes equal

$$P_1 = 1.0 \cdot 3 + 0.9 \cdot 0.7 \cdot 3.0 + 0.7 \cdot 0.8^2 \cdot 0.$$

Without waiting for the second hint, the participant sends the right solution to the third point of the problem. As a result, he receives a total amount of points equal to

$$P_1 = 1.0 \cdot 3 + 0.9 \cdot 0.7 \cdot 3.0 + 0.7 \cdot 0.8^2 \cdot 4 = 6.682.$$

3. Ok, if for the correct solution of one point I need the correct result in the previous paragraph, but I didn't succeed, will there be a penalty coefficient?

Yes. There is no any propagation error. We don't like it very much, but it will be more objective. The propagation error rule is enabled only if an additional indication is made in the text of the problem.

4. Real heavy. And how long does the checking take and how often does it take?

- The decision sent by the participant must be checked within 15 hours. If the solution has not been verified within the specified period, leave a comment in your personal account, then the jury will see a notification. We ask you not to keep in mind that the verification of the solution has been delayed. We hope that such cases will not ~~happen a bit~~ be, but may be different.
- **It's important!** Note that if you send a solution 15 hours or less before the hint, we don't guarantee a check before the hint is published.
- **It's important 2.0!** If the participant sends the wrong solution for the fifth time, then the jury cannot guarantee the participant the verification of the problem within 15 hours. In this case, the jury ~~does not guarantee anything~~ will continue to check, but the response time can be any.

5. Okay, is there anything else?

- Yes. There is a very important moment with a(an) cheating alternative scores. In some problems (and most likely in all), an alternative problem (it may consist of several questions) will be published as the last hint, which may lead to the correct solution.
- From this moment, the participant of the Olympiad has the opportunity to make a CHOICE. The participant can continue to send solutions to the main task, or can switch to an alternative task at any time before the final deadline. ~~But it's worth taking at least one step along this path.~~ In the event that a participant switches to an alternative task, he must clearly indicate this at the beginning of the sent decision. In this case a penalty coefficient for the Alternative problem is

$$0{,}7 \cdot \sum_i \frac{k_i \cdot p_i}{10},$$

  where p_i is a point for the problem item, and k_i is a penalty coefficient for the corresponding problem's item at the moment of moving to the Alternative problem. In other words, maximal points for the alternative problem equals to the maximal points you can gain at the moment of moving to the alternative one multiplied by 0,7. The rules for checking an alternative problem are the same as for the main problem. Since the transition to an alternative problem, there is no possibility to return to solving the main problem. **Since switching to an alternative selection, there is no opportunity to return to solving the main task.** Also, after switching to an alternative task **the points for the main task are reset**.

<div align="center">Good luck!</div>