1 Original Problem Submission

We are looking for **one** original problem that you have written by yourself, as well as an accompanying solution. Your submission can either be typed (e.g. using LaTeX) or handwritten, as long as we can understand both the problem statement and solution. We do not care particularly about how *difficult* the problem is, but instead we ask that you design a problem that is unique and approachable. The format and style (whether it is a short response or a multi-part question) is up to you!

1.1 Objectives

The overarching objectives for each problem are:

- to be enjoyable for contestants to solve.
- to encourage creativity and critical thinking.

1.2 Criteria

Your submission:

1. **should** be approachable by a significant amount of contestants. A good point of reference would be either a medium Open level problem, or an Easy Invitational level problem (See the 2020 exam for reference).
2. **should** focus on physical ideas, rather than "bashing" equations.
3. **must not** be copied or largely copied from a preexisting source. If you draw light inspirations from a source, you **must** include where the idea came from in your submission.
4. **must** only test ideas from the IPhO Syllabus. If additional information is needed, it **must** be provided as background information.

2 Problem Improvement Submission

A large part of working in a team environment is to give feedback and improve each other's problems. For this submission, you will pick a preexisting problem (e.g. a past OPhO problem, or a problem from your country's Olympiad) and modify/add **one** part to make the problem better.[1].

2.1 Constraints

Your submission, in addition to the ones listed earlier (with the exception of 3.):

- **must** clearly state where the original source is.
- **should** add a nontrivial change. Something like editing the grammar or how the question is phrased, while appreciated, are not allowed. However, something like changing the context (e.g. from a circuits problem to a thermodynamics problem) will be accepted. Adding additional parts that relate to the original problem is also acceptable.

[1] "Better" is a vague term, so you have the freedom to interpret this however you like. If you think the problem would benefit from being easier, harder, or introduce a similar idea, go for it!