Proposed problems for the IMC 2023

Problem 1 (Géza Kós, Eötvös University, Budapest). Tell me why and how to use this template.

Remark. You can add remarks to the problem statements as well.

Solution. The aim of this template is to help merging and compiling the file of all problem proposals. In the past we received problems in various formats, using various LATeX packages and macros. The individual formats made it very hard to merge the problems into a single document.

- Please copy/rename this file and insert your problems. You can send more problems in one file.

- Please change only the region between the comments DOCUMENT_BEGIN and DOCUMENT_END. The lines outside this region will be ignored at merging.

- You can insert your macros in section "My macros".

- Write the problem statements between \begin{problem} and \end{problem}. This environment expects your name and university as an argument.

- Similarly, the solutions can be put between \begin{solution} and \end{solution}. You can add an optional number to the solution in brackets.

- For lemmas and their proofs you can use the environments lemma and proof. In these cases as well, you can add an optional number in brackets.

- If you want to add remarks either to the statement or the solution, use the environment remark. You can optionally add a number in brackets.

  Remark. Here is a remark.

  Remark 2. Here is a numbered remark.

  Lemma 3.
  $$1 + 2 = 3 \tag{1}$$

  Proof 5. To prove (1), observe $1 + 2 = 2 + 1 = 3$.

- Choose your macro and label names in such a way that they will be probably different from the names used by other people. It is unlikely when several people use the label name eq1 or the same macro name.

Problem 2 (Géza Kós, Eötvös University, Budapest). Can I insert figures?

Solution 1 (using EPS). Yes. Please use Encapsulated Postscript (EPS) figures and insert them using the \epsfig command:

```
\begin{center}
  \epsfig{figure=GKosElteCircles.eps, scale=1.0}
\end{center}
```


Do not forget to send us the EPS files. :-)

Similarly to the macro names and labels, do not use file names like ,,fig1.eps". A good idea is to put some unique string into the file name, e.g. your name like ,,GKosElteCircles.eps".

Solution 2 (without EPS). If you have your figures in a different format and cannot convert them into EPS, send them anyway, we will convert them.