

Vaccinating meaningfully



**Preliminary round Olympiad November 18,
2018**

Colophon

The Mathematics Alympiad (Wiskunde Alympiade) is an initiative of the Freudenthal Institute, Utrecht University. The Alympiad committee is responsible for the organisation of the Alympiad and for producing the assignment. The committee consists of:

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Guide for the preliminary round assignment for the 2018/2019 Mathematics Olympiad

This Mathematics Olympiad assignment consists of five (exploratory) assignments and two final assignments. The first five assignments are a run-up to the final assignments: all the knowledge and insights from these assignments can be applied in the final assignments.

General advice for working on this assignment:

- First read the full text of the assignment so you will know what you have to do.
- Keep an eye on the time you spend on the first five assignments; take plenty of time for the final assignments, at least three hours.
- If you divide up tasks within your team, discuss the results with each other after every assignment.
- Several questions use the word 'research'. Always indicate clearly for these questions what you research, possibly research simpler problems, go further than 'just answering the question', research alternatives. These will be criteria that the quality of your elaboration will be judged on.
- If you adapt certain approaches, methods or procedures while working on the assignments, describe your adaptations in your report and include why you made them.
- If you refer and/or cite related information from any resources, make a list of references.
- It may be a good idea to use Excel or another spreadsheet program for this assignment.

Handing in:

- The two final assignments and preliminary assignments 1 to 5 as appendices.

When you hand in your work, the jury will receive a digital copy in PDF. If you have any additional appendices with your work, include them also in the PDF file. Be sure that only your Control Number is written both on the top page *and* in the file name. Do NOT write the name of your school *and* your own names anywhere.

Judging:

These are some of the points that may be considered by the jury:

- Legibility and clarity of the final assignment;
- How complete the work is;
- The use of maths;
- The argumentation used and justifications of choices that have been made;
- The depth to which the various assignments have been answered;
- Presentation: form, legibility, structure, use and function of illustrations;
- (Mathematical) creativity in your elaboration of the assignments.

Have fun and good luck!