TERM PROJECT
Due: Thursday 9.30am April 7, 2022.

Goal: Explore some mathematical ideas that interest you, then share your exploration.

Project topic

There are many possibilities on the suggested topic list and aspects to investigate are

- Learning a new piece of mathematics – perhaps there is a mathematical topic that would interest you to study, such as solving the rubik's cube using permutations.

- Mathematics in a cultural context or *ethnomathematics* – the study of the relationship between mathematics and culture. For example, what was the history behind the development of calculus. Most importantly, can you prove their results?

- Mathematics in art, film, or literature – how accurate is the mathematics, and can you prove the results?

What to turn in for your project

Once you and your group have chosen and researched your topic, the end product will be an academic article about 20 pages in length in **12 point font**, written in LaTeX. It will consist of

- A title and abstract.

- An introduction motivating your topic.

- Definitions and examples.

- Theorems and proofs you discovered. Perhaps conjectures.

- A bibliography.

Please submit both an electronic pdf copy to steph@math.ubc.ca, and a hard copy.

Project assessment

Your project will be marked out of 30 based on

(a) Mathematical content: you will be marked on how well you understood the mathematics in your project and the accuracy of your mathematical content.

(b) Quality and clarity of presentation.

Project support assessment

There will be deadline-based support for your project throughout the term, which will also contribute to your grade. For each, a single document is required per group.

(a) **Tuesday 9.30am January 25** *Motivating questions* (5 marks): 1-2 pages in **12 point font** containing a tentative title for your group project, a list of group members and at least 8 very detailed questions that will be the focus of your investigation.

(b) **Tuesday 9.30am March 1** *Project draft* (10 marks): This will be a polished draft of your group project in **12 point font**, written in LaTeX. If any holes in proofs remain they are indicated and their filling specified. You will receive substantial constructive feedback in order to perfect your final project submission.

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