

First Name	Last Name	Student ID Number	email address (@mail.utoronto.ca)

Group Report 1

- Group reports are an opportunity for students to demonstrate what they learned. Students can best demonstrate their learning by writing clear, thoughtful explanations. Don't just give us answers, show us you understand via your writing!
- Groups are assigned by TAs in tutorial subsections.
- Group size is 2 or 3 students. Exceptions can be made for special circumstances. Please contact your TA.
- Work on each item individually first. Then meet with your group to create a final draft together.
- Learn how to submit work on gradescope and tag your group members. Go to <https://help.gradescope.com/article/m5qz2xsnjy-student-add-group-members>
- One member submits for the whole group and tags their group mates.
- Use only your utoronto email, and search for your group members via their utoronto email.
- Groups can resubmit for full marks one time.
- Your tutorial TA is your point of contact regarding group reports. Please attend tutorials to get help on group reports, get feedback, etc.

Productive Failure, Academic Integrity

Productive failure is an important aspect of MAT223 group reports. We allow one resubmission for full marks. We encourage students to make honest efforts on groups reports so that you can get useful feedback from your TA about your mathematical reasoning and writing, which will help you improve and do better in future courses. We cannot help you learn if you copy work from others.

Academic honesty and integrity are fundamental to the mission of higher education and of the University of Toronto.

It is okay to use appropriate outside resources. Please cite all your sources, including people, websites, computational programs.

Your TA is your main point of contact for group reports. You will have time in tutorials to work on group reports, students can get feedback on mathematics and writing before reports are turned in.

Academic dishonesty is...

- Using someone else's words or ideas without proper documentation.
- Copying some portion of your text from another source without proper acknowledgement.
- Borrowing another person's specific ideas without citation.
- Turning in an assignment written by another person, from an "service," or copied from a website.
- Using AI, such as ChatGPT, and presenting AI generated text as your own work without citation.

List the resources you used:

1. Start with the definition of non-negative linear combinations in the textbook. Last term, some MAT 223 students described non-negative linear combinations of two vectors as usually forming an “infinite pizza slice.” This idea is true in many cases. Using your own examples, refine this idea and explain the different situations that are possible.

2. This problem is about row reduction, which is an essential skill in MAT 223. See Appendix 2. Using your own examples and words, write a practice guide for future MAT223 students learning row reduction. Your guide should include a general explanation and examples that include the cases when there is one solution, infinitely many solutions, and no solutions.

3. The context for this problem is \mathbb{R}^3 . Find two or more ways to convert the equation of a plane in Cartesian form, $ax + by + cz = d$ into vector form. Write your process as if you were writing a textbook manual. Your audience is students learning your method for the first time.