

Interactive Math Notebook

Welcome to the **Math Problems** repository. This project is designated as a comprehensive template for your personal digital notebook, intended to serve you throughout the entire course.

This repository is bilingual (English/Polish) and structured to facilitate the creation of a personalized knowledge base via the Fork & Clone method.

Workflow and Methodology

To utilize this material effectively, follow the standard procedure:

1. **Fork this Repository:**
 - Navigate to the source repository: https://github.com/dchorazkiewicz/Math_Problems_Repo
 - Create your private copy using the **Fork** feature on GitHub.
2. **Clone Locally:** Download the repository to your local machine.
3. **Document Solutions:**
 - Navigate through the problem lists (e.g., Algebra, Analysis).
 - For every problem file (e.g., `01_vectors.md`), a corresponding empty directory has been provisioned (e.g., `solution_01_vectors/`).
 - These directories are your **workspaces**. Create Markdown files within them to store your solutions, proofs, and theoretical notes.
4. **Version Control:** Regularly commit and push your work to your GitHub repository to ensure data persistence.

The Role of Notes in Exam Preparation

It is crucial to understand the distinction between the learning phase and the verification phase:

- **The Final Exam:** The exam is **written, in-class, and conducted entirely offline**. You will not have access to computers, smartphones, or AI tools during the assessment.
- **The Notebook's Purpose:** The extensive notes you prepare here are your primary study material. You must create them, read them, and understand them deeply *now*, so you can reproduce the logic *later* without technological assistance.

Leveraging AI for Personalized Learning

We strongly encourage the use of AI tools (ChatGPT, Claude, Gemini) during the semester to prepare your materials. AI allows for the creation of **personalized notes** tailored to your specific needs:

- **Adaptability:** A standard textbook definition might be unclear to you. You can ask AI to “explain this step-by-step” or “provide a geometric intuition,” creating a note that matches your learning style.
- **Efficiency:** Do not copy content from the rendered HTML page. Instead, copy the raw Markdown code from the repository into the AI prompt to preserve mathematical formatting.
- **Goal:** The objective is to generate a professional, comprehensive note that serves as a self-study resource.

Classroom Expectations and Student Responsibility

All problem lists are available from the first day of the semester. This allows for advanced preparation.

- **Zero Excuses Policy:** Given the availability of GenAI tools, claiming “I didn’t know how to start” or “I couldn’t solve it” is not an acceptable justification. A basic solution can be generated in seconds, even on a mobile device while commuting.
- **Focus on Discussion:** Class time is dedicated to discussing solutions, analyzing difficulties, and clarifying doubts—not for solving problems from scratch. You are expected to arrive with prepared materials.
- **Conscientiousness:** Building this repository is an exercise in professional responsibility and managing your work environment.

For Tech Enthusiasts: GitHub Pages Deployment (Optional)

Students interested in technology may choose to publish their notes as a website using GitHub Pages.

- Use the `mkdocs gh-deploy` command to build and host your notes.
 - **Disclaimer:** This is completely optional and does not affect your grade. It is intended solely for self-development.
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Available Topics

- **Algebra:** Matrices, determinants, systems of equations.
- **Geometry:** Vectors, lines, and planes.
- **Analysis:** Limits, derivatives, integrals.
- **Probabilistic Methods:** Probability theory and statistics.

Select a topic from the menu to begin.