Comments on old exams from pre-June 2024.

Earlier versions of this course had almost, but not exactly, the same content. The problems on old exams roughly fall into the following three categories:

- **A**. Relevant to us.
- **B**. Was probably meant to be solved using techniques outside our course, but can also be solved with our techniques. This may make the problem harder.
- C. Not relevant to us.

Exam 2024-01-03

A. 1, 2, 3, 4a, 6, 7

 $\mathbf{B.}$ –

C. 4b, 5

Exam 2023-08-17

A. 1, 3, 4a, 5, 6

B. 4b (Harder without Euler's function. Solvable using Fermat + CRT.)

C. 2, 7

Exam 2023-06-03

A. 1, 2, 3b, 4, 5, 7

B. 6 (Harder without memorizing derangement formula. Solvable with PIE.)

C. 3a

Exam 2022-10-21

A. 1, 2, 3, 4, 5, 7 B. – C. 6

Exam 2022-08-18

A. 1, 2b, 3, 4, 5, 6, 7
B. C. 2a

Exam 2022-06-03

A. 1, 2, 4a, 7

B. 4b (Harder without Euler's function. Solvable with PIE.),6 (Harder without memorizing derangement formula. Solvable with PIE.)

C. 3, 5

Exam 2021-10-22

A. 1, 2, 3bc, 4, 5, 6, 7 **B.** –

C. 3a

Exam 2021-08-19

A. 1, 2, 3, 4, 5, 6, 7 B. – C. –

Exam 2021-06-03

A. 1, 2, 3, 4, 5, 7

B. 6c (This is *easier* without derangements.)

C. 6ab