

## Midterm: Exam topics

Pick a day between March 23 and 25 to do the exam. The exam will be distributed on Wednesday March 23.

We will have a global review on Monday March 21 in the usual room and prolong it a bit more. On March 23, we get back into probability and also some opportunity there to review a bit more of probability notions.

Here are the topics:

### Linear algebra

#### Solving systems of linear equations

Row reduction. Inverse of a matrix.

#### Finding the Kernel and image of a matrix

Row reduction. Identifying Pivot columns.

#### Linear transformations

Identify basic linear transformations: rotations, reflections, projections, shears.

### Change of coordinates

Writing a vector in new coordinates. Writing a matrix in new coordinates.

## Probability

### What is a probability space?

Get the probability of events. Combinations, permutations.

### Bayes formula

Use Bayes formula to get probabilities under condition.

### Random variables

Expectation, Variance, Covariance, Standard Deviation, Correlation

### Binomial distribution

Definition and properties of this distribution.

### Data fitting

Least square formula. Projection formula.