1. Solve a system of linear equations using Gauss-Jordan elimination
2. Reduced row-echelon form (rref) of a matrix, how to find it, and how the rref of a matrix gives the solution of a linear system
3. Rank of a matrix
4. How does the solution of a linear system depend on the ranks of coefficient- and augmented matrices
5. How to add and multiply matrices
6. Matrix multiplication is associative, but not commutative!
7. What is a vector? How to add vectors and take a scalar multiple of a vector? When two vectors are parallel?
8. What is R^n? What operations can one do with its elements?
9. Calculate the dot product of two vectors in R^n
10. What does it mean that two vectors are orthogonal?
11. What is a linear transformation? Can you give some examples?
12. What is the matrix of a linear transformation and how to find it
13. Linear transformations on a plane and space: scaling, projection, reflection, rotation.
14. What is a composition of linear transformations and how to find its matrix
15. What is the inverse transformation?
16. Inverse matrix, what is it? how to compute it?
17. What is a linear combination of vectors?
18. What is a span of vectors?
19. What is the kernel of a linear transformation?
20. What is the image of a linear transformation?