ETHZ – Toric Geometry – Spring 2025 **Organiser: Alessandro Giacchetto**
Exercise sheet 4

Exercise 1. *In the definition of the distinguished point x_τ associated with a cone τ in a fan, we required τ to be the face of a cone σ. Does the definition depend on the choice of σ?*

Exercise 2. *Compute the distinguished points, the orbits, and their closures for every cone in the following toric varieties:*

- *The double cone.*
- *The projective line $\mathbb{P}^1$.*
- *The surface $\mathbb{P}^1 \times \mathbb{P}^1$.*