Today we proved the following three statements:

- \( D_F \cong \mathbb{P}(H_F) \times \mathbb{P}(V^*/H_F) \). In particular, \( D_F \) is a divisor (codimension 1 closed subvariety).
- If \( F \) and \( G \) are incomparable, then \( D_F \cap D_G = \emptyset \).
- \( \pi^{-1}(\mathbb{P}H_e) = \bigcup_{e \in F} D_F \).

1. If \( F \leq G \), show that \( D_F \cap D_G \neq \emptyset \). More generally, if \( F_1 \leq F_2 \leq \cdots \leq F_m \), try to show that \( \bigcap_{i=1}^m D_{F_i} \neq \emptyset \).