The Wonderful Geometry of Matroids

Lecture 16: The wonderful compactification (continued)

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 $\bigcap_{i=1}^{m} D_{F_i} \neq \emptyset$.