

**Math 4550 Hints for questions for April 21, 2009**

1. Euler's formula applies to any planar graph, not just those coming from polytopes.
2. For distinct vertices  $v, w$  which  $a \in (\mathbb{R}^d)^\star$  are not in general position?
3. We already know that  $\mu_{\mathcal{F}(P)}(\emptyset, P) = (-1)^{\dim P}$ . Now use induction on  $\dim F$  and vertex figures.
4. See pg. 108-109.
5. For  $k = 1$ , is  $G^\star$  ever not connected? Where does simple come in?