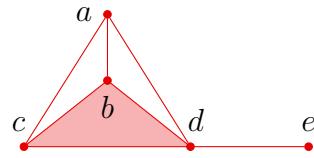


1. **Alexander duality.** Consider the simplicial complex Δ over $X = \{a, b, c, d, e\}$ shown below:



The 5-dimensional Boolean lattice 2^X also appears below.

- (i) In the Boolean lattice, color the faces red, and the nonfaces blue.
- (ii) Find the maximal faces, and the minimal generators of the Stanley-Reisner ideal I_{Δ^c} .
- (iii) Compute the primary decomposition of I_{Δ^c} .

