

Exercise on Polarity

Let $n \geq 3$ be any integer, and consider the polytope P_n given by the following H-representation. There are 2^n inequalities of the form:

$$a_1x_1 + a_2x_2 + \cdots + a_nx_n \leq 1$$

where each of the a_i is either +1 or -1.

Give a compact description of the vertices of this polytope and show it is correct.

Hint: Consider the polar.