

1. Show that Δ_{cube} is balanced by the constant weight.
2. Show that every weight that balances Δ_{cube} is constant.
3. Let Δ'_{cube} be the graph obtained by generically perturbing one of the vertices of Δ_{cube} . Show that Δ'_{cube} admits no nonzero balanced weight.
4. (Minkowski) Show that the graph of any 3-dimensional polytope admits a positive balancing weight, and this weight is unique up to scale if the polytope is simple.
5. Show that the Bergman fan of a matroid is balanced by the constant weight.
6. Show that every weight that balances the Bergman fan of a matroid is constant.