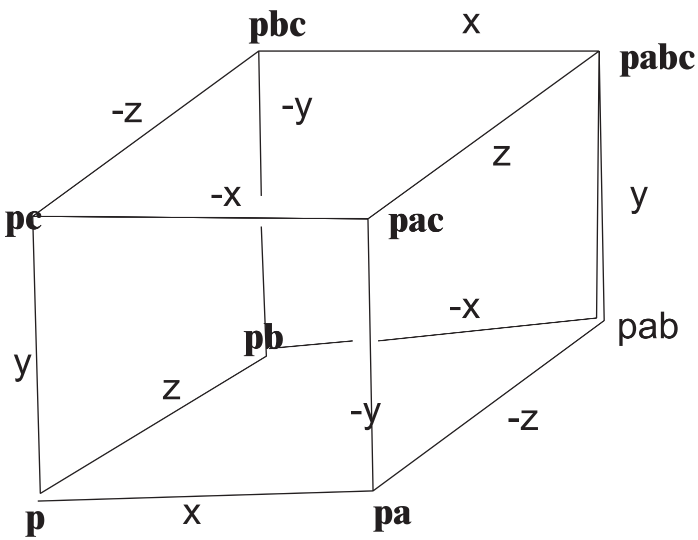

$x + y + z = 0$

the vertices are the classes modulo D(n) of the following permutations: p, pa, pb, pc, pab, pac, pbc, pabc, where p is an arbitrary permutation and a,b,c are 3 non-intersecting diagonals (i.e. 3 commuting involutions from T, represented by 3 diagonals of an n-gon).

the orientation of the edges is not shown. The tips of the edges are the vertices with the smallest number of permutations in the product. i.e there is an arrow from pc to pbc; and from pab to pabc and so on.

for every vertex, the sum of the numbers attached to the edges is zero, so the picture shows a cycle in homology of B(n). This cycle is zero because it can be written as a sum of boundaries, represented by its faces. The boundaries have the coefficients +/- x,y or z.

In a similar way, k numbers with zero sum, and k commuting involutions (k non-intersecting diagonals) give a zero cycle in homology.