TCC COURSE ON OUTER SPACE AND AUTOMORPHISMS OF FREE GROUPS

EXERCISES 3

(1) The first definition of Outer space CV_n we gave was in terms of actions on trees. Show that inner automorphisms act trivially on this space, according to the definition we gave of the action.
(2) Show that if a free simplicial action of F_n on a tree is minimal, then the quotient graph is finite and has no univalent vertices.
(3) Show that the dimension of CV_n is $3n - 4$. [Use the Euler characteristic]