

Group theory

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1 HNN extensions

2 Cayley graph

notation $\Gamma(G, X)$ where G is the group, X is the generator.

3 Bass-Serre theory

A group G is a free group iff it acts freely and without inversions on a tree.

Let X be a finite set of generators for a group G . Then G is **word hyperbolic** if $(\Gamma(G, X), d)$ is hyperbolic, where d is the path metric on G (the vertex set of $\Gamma(G, X)$).

Where (X, d) is a metric space.