Template Definition

- $\phi : B_n \rightarrow H$ is a homomorphism.

- Define $\beta_\phi = \{ \phi(\alpha \delta^{\pm} \alpha^{-1}) : \alpha \in B_n, \delta \in \{\sigma_1 \ldots \sigma_{n-1}\} \}$

- A k-template for a braid x is a tuple $(b_1, b_2, \ldots b_k) \in \beta_\phi^k$ such that $b_1 b_2 \ldots b_k = \phi(x)$

Permutation templates

- A k-**template** in S_n is tuple of transpositions $((i_1 j_1), \ldots, (i_k, j_k))$ such that
$\phi(x) = (i_1 j_1) \cdots (i_k j_k)$

- Example: $x = \bar{1}211$

  - 2-templates: $((13), (12)), ((23), (13)), ((12), (23))$

  - The presentation $(\bar{1}21)(1)$ satisfies the template: $(13), (12)$