RRRR

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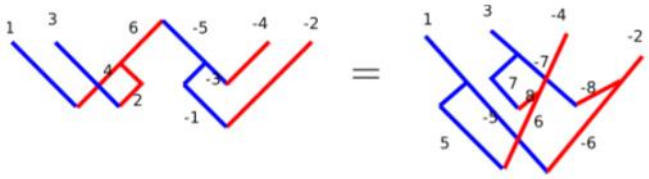
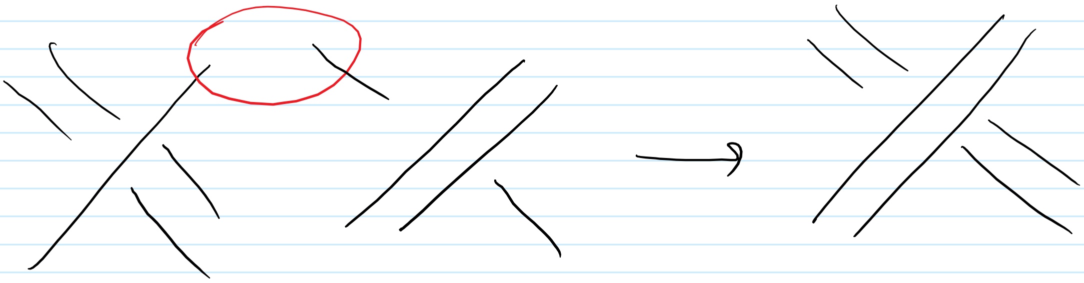
require that R_{ij} is invertible in two senses: There should exist $P^{ij} \in Hom_{\mathcal{D}}(\{i,j\},\emptyset)$ $, j\})$ such that $R_{ij}P^{jk} = \tilde{\mathrm{id}}_i^k$ and $R_{ji}P^{kj} = \bar{\mathrm{id}}_i^k$ and $R_{i_1j_1}R^{-1}_{i_2j_2}\tilde{m}_i^{i_1i_2}\bar{m}_j^{j_1j_2} = \tilde{1}_i\bar{1}_j$. Second sfies the following two equations:

$$R_{32}R_{14}\bar{m}_6^{42}P^{6,-5}\tilde{m}_{-5}^{-1,-3}R_{-1,-2}R_{-3,-4} = \tilde{m}_1^{5,-5}\tilde{m}_3^{7,-7}R_{56}R_{78}R_{-5,-6}R_{-7,-8}\bar{m}_{-4}^{8,6}\bar{m}_{-2}^{-8,-6}$$

ar one with bars replaced by tildas (and a little swap), see the figure for a picture:



Figure 6: Equation for R, odd numbers are blue and belong to $\tilde{\mathcal{M}}$.