

$$\begin{array}{c}
(1, 2, \dots, a_1, 1', 2', \dots, a'_2, \dots, 1', 2', \dots, a'_n) \\
\downarrow \sigma_1 \qquad \downarrow \sigma_2 \qquad \dots \qquad \downarrow \sigma_n \\
(\underbrace{\sigma_1(1), \sigma_1(2), \dots, \sigma_1(a_1)}_{\text{1st block}}, \underbrace{\sigma'_1(1), \sigma'_1(2), \dots, \sigma'_1(a_1)}_{\text{2nd block}}, \dots, \underbrace{\sigma'_n(1), \sigma'_n(2), \dots, \sigma'_n(a_n)}_{\text{a}_n\text{-th block}}) \\
\downarrow \tau \\
(\dots, \underbrace{\sigma_1(1), \sigma_1(2), \dots, \sigma_1(a_1)}_{\tau(1)\text{-th block}}, \dots, \underbrace{\sigma'_1(1), \sigma'_1(2), \dots, \sigma'_1(a_1)}_{\tau(2)\text{-th block}}, \dots, \underbrace{\sigma'_n(1), \sigma'_n(2), \dots, \sigma'_n(a_n)}_{\tau(a_n)\text{-th block}}, \dots, )
\end{array}$$