

$$\begin{array}{c}
(\textcolor{red}{1}, \textcolor{red}{2}, \dots, \textcolor{red}{a_1}, \dots, \textcolor{blue}{1'}, \textcolor{blue}{2'}, \dots, \textcolor{blue}{a_n}) \\
\downarrow \rho' \\
(1', 2', \dots, a_{\rho^{-1}(1)}, \dots, 1', 2', \dots, a_{\rho^{-1}(n)}) \\
\downarrow (\tau \circ a_{\rho^{-1}(1)}, \dots, a_{\rho^{-1}(n)})(\sigma_{\rho^{-1}(1)}, \dots, \sigma_{\rho^{-1}(n)}) \\
(\sigma'_{\rho^{-1}(\tau^{-1}(1))}(1), \dots, \sigma'_{\rho^{-1}(\tau^{-1}(1))}(a_{\rho^{-1}(\tau^{-1}(1))}), \dots, \sigma'_{\rho^{-1}(\tau^{-1}(n))}(1), \dots, \sigma'_{\rho^{-1}(\tau^{-1}(n))}(a_{\rho^{-1}(\tau^{-1}(n))}))
\end{array}$$