Notes on Sup-lattices

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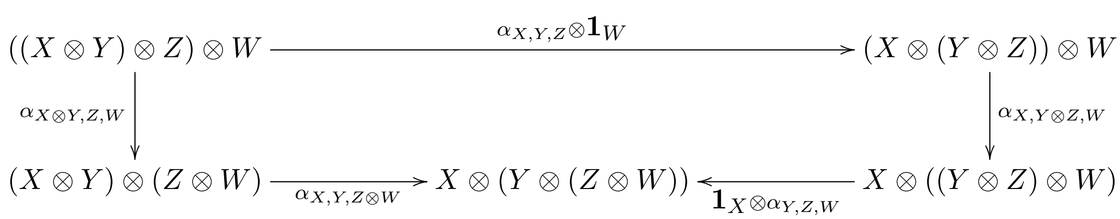
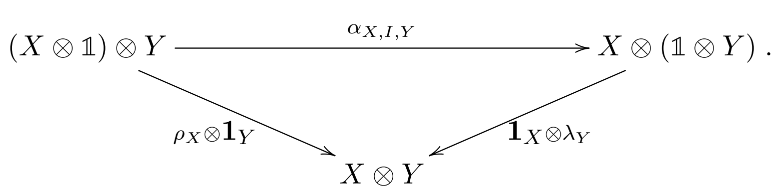
These notes are based on the book [**JohnsonYau2021**].

1. A *monoidal category* is $(\mathbb{A}, \otimes, \alpha, \lambda, \rho, \mathbb{1})$, where:

   - $\mathbb{A} \times \mathbb{A} \xrightarrow{\otimes} \mathbb{A}$ is a bifunctor, called the *monoidal product*,
   - an object $\mathbb{1}$ of $\mathbb{A}$, called the *monoidal unit*,
   - three natural isomorphisms — the *left unit isomorphism* $\langle \mathbb{1} \otimes X \xrightarrow{\lambda_X} X : X \in \mathbb{A}_0 \rangle$, the *right unit isomorphism* $\langle X \otimes \mathbb{1} \xrightarrow{\rho_X} X : X \in \mathbb{A}_0 \rangle$ and the *associativity isomorphism* $\langle (X \otimes Y) \otimes Z \xrightarrow{\alpha_{X,Y,Z}} X \otimes (Y \otimes Z) : X, Y, Z \in \mathbb{A}_0 \rangle$,
   - these are subject to:



   and



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