

Example

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2023

1 Exercise

$$\begin{aligned} &|0000\rangle X_3 X_4^{1:3} X_2 X_4^{1:3} X_{1,2} X_4^{1:3} X_2 X_4^{1:3} X_{1:3} \\ &= [|0010\rangle] X_4^{1:3} X_2 X_4^{1:3} X_{1,2} X_4^{1:3} X_2 X_4^{1:3} X_{1:3} \\ &= [|0010\rangle] X_2 X_4^{1:3} X_{1,2} X_4^{1:3} X_2 X_4^{1:3} X_{1:3} \\ &= [|0110\rangle] X_4^{1:3} X_{1,2} X_4^{1:3} X_2 X_4^{1:3} X_{1:3} \\ &= [|0110\rangle] X_{1,2} X_4^{1:3} X_2 X_4^{1:3} X_{1:3} \\ &= [|1010\rangle] X_4^{1:3} X_2 X_4^{1:3} X_{1:3} \\ &= [|1010\rangle] X_2 X_4^{1:3} X_{1:3} \\ &= [|1110\rangle] X_4^{1:3} X_{1:3} \\ &= [|1111\rangle] X_{1:3} \\ &= [|0001\rangle] \end{aligned}$$