

$$\begin{array}{ccccc}
 \mathrm{Hom}_{\mathbf{C}}(X; Y) \otimes \mathrm{Hom}_{\mathbf{C}}(Y; Y) & \xrightarrow{m_{X, Y, Y}} & \mathrm{Hom}_{\mathbf{C}}(X; Y) & \xleftarrow{m_{X, X, Y}} & \mathrm{Hom}_{\mathbf{C}}(X; X) \otimes \mathrm{Hom}_{\mathbf{C}}(X; Y) \\
 \mathrm{Id}_{\mathrm{Hom}_{\mathbf{C}}(X; Y)} \otimes j_Y \uparrow & \nearrow \text{ru} & & \nwarrow \text{lu} & \uparrow j_X \otimes \mathrm{Id}_{\mathrm{Hom}_{\mathbf{C}}(X; Y)} \\
 \mathrm{Hom}_{\mathbf{C}}(X; Y) \otimes 1 & & & & 1 \otimes \mathrm{Hom}_{\mathbf{C}}(X; Y)
 \end{array}$$