

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

$\text{Hom}_{\mathbf{C}}(X; Y) \otimes \text{Hom}_{\mathbf{C}}(Y; Y) \xrightarrow{m_{X, Y, Y}} \text{Hom}_{\mathbf{C}}(X; Y)$
 $\text{Hom}_{\mathbf{C}}(X; X) \otimes \text{Hom}_{\mathbf{C}}(X; Y) \xleftarrow{m_{X, X, Y}} \text{Hom}_{\mathbf{C}}(X; Y)$
 $\text{Id}_{\text{Hom}_{\mathbf{C}}(X; Y)} \otimes j_Y \uparrow$
 $\text{Hom}_{\mathbf{C}}(X; Y) \otimes 1$
 $1 \otimes \text{Hom}_{\mathbf{C}}(X; Y) \xleftarrow{j_X \otimes \text{Id}_{\text{Hom}_{\mathbf{C}}(X; Y)}} \text{Hom}_{\mathbf{C}}(X; Y)$