

$$\begin{array}{ccc}
 \mathbf{C}_1 & \xrightarrow[\text{Cat}]{f_1} & \mathbf{D}_1 \\
 \downarrow \text{Cat } F & & \uparrow \text{Cat } G \\
 \mathbf{C}_2 & \xrightarrow[\text{Cat } f_2]{\text{Cat}} & \mathbf{D}_2 \\
 \downarrow \text{Cat } H & & \uparrow \text{Cat } I \\
 \mathbf{C}_3 & \xrightarrow[\text{Cat } f_3]{\text{Cat}} & \mathbf{D}_3
 \end{array}$$

$$\begin{array}{ccc}
 \mathbf{C}_1 & \xrightarrow[\text{Cat}]{f_1} & \mathbf{D}_1 \\
 \downarrow \text{Cat } F \circ H & & \uparrow \text{Cat } I \circ G \\
 \mathbf{C}_3 & \xrightarrow[\text{Cat } f_3]{\text{Cat}} & \mathbf{D}_3
 \end{array}$$