

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

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