

$$\begin{array}{ccc}
 F(X) & \xrightarrow{F(f)} & F(Y) \\
 \alpha_X \downarrow & & \downarrow \alpha_Y \\
 G(X) & \xrightarrow{G(f)} & G(Y) \\
 \beta_X \downarrow & & \downarrow \beta_Y \\
 H(X) & \xrightarrow{H(f)} & H(Y)
 \end{array}$$