

$$\begin{array}{ccc}
 \Phi(X) & \xrightarrow{\Phi(f)} & \Phi(Y) \\
 \downarrow \eta_X & & \downarrow \eta_Y \\
 \Psi(X) & \xrightarrow{\Psi(f)} & \Phi(Y)
 \end{array}$$