

$$\begin{array}{ccccc}
 A & & F(A) & \xrightleftharpoons[\varepsilon_A]{\eta_A} & G(A) \\
 \downarrow f & & \downarrow F(f) & & \downarrow G(A) \\
 B & & F(B) & \xrightleftharpoons[\varepsilon_B]{\eta_B} & G(B)
 \end{array}$$