

$$\begin{array}{ccccc}
 & F(A) & \xrightarrow{F(f)} & F(B) & \\
 & \downarrow \sigma_A & & \downarrow \sigma_B & \\
 (\tau \cdot \sigma)_A & G(A) & \xrightarrow{G(f)} & G(B) & (\tau \cdot \sigma)_B \\
 & \downarrow \tau_A & & \downarrow \tau_B & \\
 & H(A) & \xrightarrow{H(f)} & H(B) &
 \end{array}$$