$$F(X) \xrightarrow{F(f)} F(Y)$$

$$\alpha_X \downarrow \qquad \qquad \downarrow \alpha_Y$$

$$G(X) \xrightarrow{G(f)} G(Y)$$

$$\beta_X \downarrow \qquad \qquad \downarrow \beta_Y$$

$$H(X) \xrightarrow{H(f)} H(Y)$$