$$\begin{array}{ccc}
\mathbf{P}_1 & \xrightarrow{\ f_1\ } & \mathbf{S}_1 \\
\downarrow{\scriptstyle f} & & \uparrow{\scriptstyle g} \\
\mathbf{P}_2 & \xrightarrow{\ f_2\ } & \mathbf{S}_2
\end{array}$$