

$$\begin{array}{ccccccc}
 \text{Ker}(f) & \xrightarrow{e} & A & \xrightleftharpoons[\emptyset]{f} & B & \xrightarrow{c} & \text{Coker}(f) \\
 \uparrow h & & \nearrow \varphi & & \searrow \psi & & \downarrow k \\
 C & & & & & & D
 \end{array}$$