

Chapter 1

hgaha

$$\begin{array}{ccccccc} 0 & \dashrightarrow & M_x & \xrightarrow{i} & N & \xrightarrow{p} & L \dashrightarrow 0 \\ \\ 0 & \longrightarrow & \operatorname{Hom}(P, M) & \xleftarrow{i_1} & \operatorname{Hom}(P, N) & \xrightarrow{p_1} & \operatorname{Hom}(P, L) \\ \\ & & \operatorname{Hom}(M, P) & \xleftarrow{i_2} & \operatorname{Hom}(N, P) & \xleftarrow{p_2} & \operatorname{Hom}(L, P) \longleftarrow 0 \end{array}$$