



$\tilde{\varphi}$ Grp-Iso

$$\tau \in \ker \varphi \quad \tau' \in \Gamma \Rightarrow \varphi \tau = 0 \Rightarrow \varphi(\tau\tau') = \underbrace{\varphi \tau}_{=0} \varphi \tau' = 0 \varphi \tau' = 0 \Rightarrow \tau\tau' \in \ker \varphi$$

$$\varphi(\tau'\tau) = \underbrace{\varphi \tau'}_{=0} \varphi \tau = 0 \varphi \tau = 0 \Rightarrow \tau'\tau \in \ker \varphi$$

$$i \in \varphi \Gamma \Rightarrow \bigvee_i i = \varphi \tau \Rightarrow \tau i = \underbrace{\varphi \tau}_{=0} \varphi i = 0 \varphi i = 0 \in \varphi \Gamma$$

$$\varphi \overline{\Gamma + \ker \varphi} \cap \overline{\Gamma' + \ker \varphi} = \varphi \overline{\Gamma\Gamma' + \ker \varphi} = \varphi \overline{\Gamma\Gamma'} = \underbrace{\varphi \Gamma}_{=0} \varphi \Gamma' = \overline{\varphi \Gamma + \ker \varphi} \cap \overline{\varphi \Gamma' + \ker \varphi}$$