

$$\begin{matrix} G \\ \cdot \\ G \\ \times \end{matrix}$$

$$\begin{matrix} G \\ \cdot \\ G \\ \cdot \end{matrix}$$

$$\begin{matrix} b \\ \cdot \\ (a,b) \end{matrix}$$

$$\begin{matrix} X \\ \overline{=} \\ \{1,2,3\} \end{matrix}$$

$$\begin{matrix} X \\ \cdot \\ \cdot \\ \cdot \end{matrix}$$

$$\begin{matrix} X \\ A \\ G \end{matrix}$$

$$\begin{matrix} a^* \\ \in \\ A \end{matrix}$$

$$\begin{matrix} a,b \\ \in \\ A \end{matrix}$$

$$\begin{matrix} + \\ + \\ + \end{matrix}$$

$$a+b \in , \forall a,b \in$$

$$\begin{matrix} G \\ (G,*,\#) \\ (G,*) \end{matrix}$$

$$\begin{matrix} * \\ * \\ (G,*) \end{matrix}$$

$$a*(b*c)=(a*b)*c,\forall a,b,c\in G$$

$$\begin{matrix} X \\ \overline{=} \\ \{1,2,3\} \end{matrix}$$

$$\begin{matrix} X \\ \cdot \\ \cdot \\ \cdot \end{matrix}$$

$$\begin{matrix} a^* \\ \cdot \\ a+ \end{matrix}$$

$$\begin{matrix} b \\ \overline{=} \\ a+ \end{matrix}$$

$$\begin{matrix} 1 \\ - \\ a,b \in \end{matrix}$$

$$\begin{matrix} * \\ (G,*) \\ (G,*) \end{matrix}$$

$$\begin{matrix} * \\ \in \\ G \end{matrix}$$

$$a*e=e*a=a,\forall a\in G$$

$$\begin{matrix} (G,*) \\ e,e' \end{matrix}$$

$$\begin{matrix} * \\ e^* \\ e' \end{matrix}$$

$$\begin{matrix} e' \\ = \\ e \end{matrix}$$

$$\begin{matrix} e^* \\ e' \\ = \end{matrix}$$

$$\begin{matrix} e' \\ = \\ e \end{matrix}$$

$$\begin{matrix} (G,*) \\ (G,*) \end{matrix}$$

$$\begin{matrix} a \\ \in \\ G \end{matrix}$$

$$\begin{matrix} g \\ \cdot \\ g^* \end{matrix}$$

$$\begin{matrix} g^* \\ = \\ e' \end{matrix}$$

$$\begin{matrix} a \\ \in \\ G \end{matrix}$$

$$\begin{matrix} g \\ \cdot \\ g^* \end{matrix}$$

$$\begin{matrix} a^{-1} \\ (G,*) \end{matrix}$$

$$\begin{matrix} e^{-1} \\ = \\ e \end{matrix}$$

$$\begin{matrix} (G,*) \\ a \in \end{matrix}$$

$$\begin{matrix} G \\ (G,*) \end{matrix}$$

$$a*b=b*a,\forall a,b\in G$$

$$,,$$

$$\begin{array}{l} (G,*)\\ G\\ *\\ (G,*)\\ 0\\ a^*\\ b\in\\ G,\forall a,b\in\\ G\\ a^*\\ (b^*\\ c)=\\ (a^*\\ b)^*\\ c,\forall a,b,c\in\\ G\\ e^*=\\ e^*=\\ a,\forall a\in\\ G\\ a\in\\ G\\ \forall a\in\\ G,\exists a^{-1}\in\\ G: \\ a^{-1}=\\ e^{-1}*\\ e\\ (-\{0\},\cdot),(-\{0\},\cdot),(+,+),(+,+),(+,+) \end{array}$$

$$\begin{array}{l} (G,*)\\ *\\ (-\{0\},\cdot),(+,+),(+,+),(+,+) \end{array}$$

$$\begin{array}{l} (G,*)\\ G\\ (G,*)\\ (G,*)\\ G\\ O(G)\\ (G,*)\\ n\\ \underbrace{a*a*\cdots*a}_{} \end{array}$$

$$\begin{array}{l} (G,*)\\ n,m\in\\ 0^n=\\ e^n=\\ a^0=\\ e,\forall a\in\\ G\\ (a^m)^n=\\ a^{mn}\\ a_n^m*\\ a_n^{m+n}\\ a^{-m}=\\ (a^{-1})^m\\ (G,*)\\ a\in\\ G\\ b\in\\ G\\ b=\\ a^k,k\in\\ a\\ G\\ a\\ G=\\ \langle a\rangle\\ G=\\ (a)\\ G=\\ \{1,-1,i,-i\}\\ i=\\ \sqrt{-1}\\ (G,\cdot)\\ (G,*)\\ (a^*\\ b)^{-1}=\\ a^{-1}*\\ b^{-1}*\\ X\\ f: \\ X\rightarrow\\ X\\ X\\ f\\ X\\ X \end{array}$$