$\mathcal{G} \in \mathbb{Z} \lhd$ ganz

$$\bigvee_{q_i}^{\mathbb{G} \barwedge \mathbb{Q}} \mathbb{G} \barwedge \mathbb{Q} = \mathbb{G}[q_1 \cdots q_n] \Rightarrow \bigvee_{c}^{\mathbb{G} \llcorner 0} \mathbb{G} \barwedge \mathbb{Q} = \mathbb{G}/c^{\mathbb{N}}$$

$$\bigvee_{a_i}^{\mathbb{G}} \bigvee_{b_i}^{\mathbb{G} \llcorner 0} q_i = \frac{a_i}{b_i} \Rightarrow \begin{cases} b_1 \cdot\cdot a_i \cdot\cdot b_n & \in \mathbb{G} \\ c = b_1 \cdots b_n & \in \mathbb{G} \llcorner 0 \end{cases}$$

$$\frac{a_i}{b_i} = \frac{b_1 \cdot\cdot a_i \cdot\cdot b_n}{b_1 \cdot\cdot b_i \cdot\cdot b_n} \in \mathbb{G}[\frac{1}{b_1 \cdots b_n}] \Rightarrow \mathbb{G} \barwedge \mathbb{Q} = \mathbb{G}[\frac{a_1}{b_1} \cdots \frac{a_1}{b_1}] = \mathbb{G}[\frac{1}{b_1 \cdots b_n}]$$

$$c \in \mathbb{G} \llcorner 0 \, (1) \, c \in \bigcap_{0 \neq \mathfrak{p} \lhd \mathbb{G}} \mathfrak{p}: \quad (2) \bigwedge_{0 \neq \mathfrak{a} \lhd \mathbb{G}} c^{\mathbb{N}} \cap \mathfrak{a} \neq \varnothing: \quad (3) \, \mathbb{G} \barwedge \mathbb{Q} = \mathbb{G}/c^{\mathbb{N}}$$

$$(1) \Rightarrow (2): \quad \mathcal{I} = \frac{0 \neq \mathbb{1} \lhd \mathbb{G}}{c^{\mathbb{N}} \cap \mathbb{1} = \varnothing}: \quad \lightning \mathcal{I} \neq \varnothing \underset{\text{Zorn}}{\Rightarrow} \bigvee \mathfrak{p} \underset{\max}{\in} \mathcal{I}$$

$\mathfrak{p}$ prim

$$\lightning \dot{a} \notin \mathfrak{p} \ni a \acute{a} \Rightarrow \mathfrak{p} \underset{\neq}{\lhd} \underbrace{\mathfrak{p} + \mathbb{G} \dot{a}} \Rightarrow \mathfrak{p} + \mathbb{G} \dot{a} \notin \mathcal{I} \Rightarrow \bigvee_{\acute{m}}^{\mathbb{N}} c^{\acute{m}} \in \mathfrak{p} + \mathbb{G} \dot{a} \Rightarrow \bigvee_{\dot{p}}^{\mathfrak{p}} \bigvee_{\dot{b}}^{\mathbb{G}} c^{\acute{m}} = \dot{p} + \dot{a} \dot{b}$$

$$\Rightarrow c^{m + \acute{m}} = \underbrace{p + ab} \underbrace{\dot{p} + \acute{a}\acute{b}} = \underbrace{p\dot{p} + p\acute{a}\acute{b} + ab\dot{p}}_{\in \mathfrak{p}} + \underbrace{a\acute{a}}_{\in \mathfrak{p}} b\acute{b} \in \mathfrak{p} \lightning c^{\mathbb{N}} \cap \mathfrak{p} = \varnothing$$

$$(2) \Rightarrow (3): \quad \bigwedge_{b}^{\mathbb{G} \llcorner 0} \bigvee_{n}^{\mathbb{N}} c^n \in \mathbb{G} b \Rightarrow \bigvee_{d}^{\mathbb{G}} c^n = db \Rightarrow \frac{a}{b} = \frac{ad}{c^n} \in \mathbb{G}/c^{\mathbb{N}} \Rightarrow \mathbb{G} \barwedge \mathbb{Q} = \mathbb{G}/c^{\mathbb{N}}$$

$$(3) \Rightarrow (1): \quad 0 \neq \mathfrak{p} \lhd \mathbb{G} \Rightarrow \bigvee_{p \neq 0}^{\mathfrak{p}} \bigvee_{a}^{\mathbb{G}} \frac{1}{p} = \frac{a}{c^n} \Rightarrow c^n = ap \in \mathfrak{p} \Rightarrow c \in \mathfrak{p}$$