$$\rfloor \xleftarrow[\text{lin}]{\ulcorner} \rfloor \ni \lrcorner$$

$$\min \ulcorner \overset{k+1}{\ltimes} \lrcorner = 0 \Longrightarrow \ulcorner \overset{0}{\ltimes} \lrcorner \cdots \ulcorner \overset{k}{\ltimes} \lrcorner \text{ free } \mathbb{K}$$

$$\lightning \bigvee_{\overbrace{{}_0\alpha \cdots {}_k\alpha} \neq 0} \underbrace{\ulcorner \overset{0}{\ltimes} \lrcorner}\, {}_0\alpha + \cdots + \underbrace{\ulcorner \overset{k}{\ltimes} \lrcorner}\, {}_k\alpha = 0 \Longrightarrow \bigvee_{0 \leqslant j \leqslant k} {}_0\alpha = \cdots = {}_{j-1}\alpha = 0 \neq {}_j\alpha \Longrightarrow \underbrace{\ulcorner \overset{j}{\ltimes} \lrcorner}\, {}_j\alpha + \cdots + \underbrace{\ulcorner \overset{k}{\ltimes} \lrcorner}\, {}_k\alpha = 0$$

$$\Longrightarrow 0 = \ulcorner \overset{k-j}{\ltimes} \overbrace{\underbrace{\ulcorner \overset{j}{\ltimes} \lrcorner}_j \alpha + \cdots + \underbrace{\ulcorner \overset{k}{\ltimes} \lrcorner}_k \alpha} = \underbrace{\ulcorner \overset{k}{\ltimes} \lrcorner}\, {}_j\alpha + \underbrace{\ulcorner \overset{k+1}{\ltimes} \lrcorner}_{=0}\, {}_{j+1}\alpha + \cdots + \underbrace{\ulcorner \overset{2k-j}{\ltimes} \lrcorner}_{=0}\, {}_k\alpha = \underbrace{\ulcorner \overset{k}{\ltimes} \lrcorner}_{\neq 0}\, {}_j\overset{\neq 0}{\alpha} \lightning$$

$$< \ulcorner \overset{\mathbb{N}}{\ltimes} \lrcorner > \xleftarrow[\text{lin}]{\digamma} < \ulcorner \overset{\mathbb{N}}{\ltimes} \lrcorner >$$

$$\digamma \underbrace{\ulcorner \overset{k}{\ltimes} \lrcorner} = \lambda \underbrace{\ulcorner \overset{k}{\ltimes} \lrcorner} + \ulcorner \overset{<k}{\ltimes} \lrcorner \Longrightarrow \operatorname{tr} \digamma = \lambda \underbrace{k+1}$$

$$\sqsubset_{\text{ideal}}$$

$$\xrightarrow[\text{lin}]{} \mathbb{K} \Rightarrow \;\sqsubset$$

$$\in$$

$$\in$$

$$\in \; + < \; ^{<k} \; >$$

$$k = 0: \quad = \; + 0$$

$$0 \leqslant k \mapsto k+1: \quad ^{k+1} \; - \; ^{k+1} \; = \; ^{k} \; - \; ^{k+1}$$

$$= \; \overbrace{\;^{k}\;}^{\in \; ^{k} + < \; ^{<k} >} - \; ^{k+1} + \underbrace{\;}_{\in} \; ^{k}$$

$$\in \; < \; ^{<k} \; > + \; ^{k} + < \; ^{<k} \; > \subset < \; ^{\leqslant k} \; >$$

$$< \; ^{\mathbb{N}} \; > \longleftarrow < \; ^{\mathbb{N}} \; >$$

$$\operatorname{tr}_{< \,^{\mathbb{N}} >} = \; \dim < \; ^{\mathbb{N}} \; >$$

$$= 0$$

$$< \; ^{\mathbb{N}} \; > \longleftarrow < \; ^{\mathbb{N}} \; >$$

$$\dim < \; ^{\mathbb{N}} \; > = \operatorname{tr}_{< \,^{\mathbb{N}} >} = \operatorname{tr}_{< \,^{\mathbb{N}} >} = 0$$

$$= \; + \underbrace{\;}_{\in} \; = \; + \overbrace{\;}^{=0} \; = \; \Rightarrow \; \in$$

$$\mathfrak{g} \underset{\text{solv}}{\ltimes} V \Rightarrow \bigvee_{\mathfrak{g} \xrightarrow[\text{lin}]{\lambda} \mathbb{K}} {}^{\mathfrak{g}}_{\lambda}\rangle V \neq 0$$

$$\text{Ind } d = \dim \mathfrak{g} \geqslant 0$$

$$0 \leqslant d - 1 \mapsto d: \quad \dim \mathfrak{g} = 1c \text{ solv } \Rightarrow \mathfrak{g} \times \mathfrak{g} \underset{\neq}{\sqsubset} \mathfrak{h} \Rightarrow 0 \neq \mathfrak{g} \neg \underbrace{\mathfrak{g} \times \mathfrak{g}}\text{ abel}$$

$$\mathfrak{f} \underset{\text{lin}}{\overset{\text{codim } 1}{\sqsubset}} \mathfrak{g} \neg \underbrace{\mathfrak{g} \times \mathfrak{g}} \Rightarrow \mathfrak{h} = \overset{-1}{\pi} \mathfrak{f} \underset{\text{ideal}}{\overset{\text{codim } 1}{\sqsubset}} \mathfrak{g}$$

$$\underset{\text{ind}}{\Rightarrow} \bigvee_{\mathfrak{h} \xrightarrow[\text{lin}]{\mu} \mathbb{K}} {}^{\mathfrak{h}}_{\mu}\rangle V \neq 0$$

$$b \in \mathfrak{g} \llcorner \mathfrak{h} b \ltimes {}^{\mathfrak{h}}_{\mu}\rangle V \sqsubset {}^{\mathfrak{h}}_{\mu}\rangle V \underset{\text{alg abg}}{\Rightarrow} \bigvee 0 \neq v \in {}^{\mathfrak{h}}_{\mu}\rangle V$$

$$b \ltimes v = v\lambda$$

$$b\mathbb{K} + \mathfrak{h} = \mathfrak{g} \xrightarrow[\text{lin}]{\lambda} \mathbb{K}$$

$$\underbrace{b\alpha + h}\lambda = \lambda\alpha + h\mu$$

$$\underbrace{b\alpha + h} \ltimes v = \underbrace{b \ltimes v}\alpha + h \ltimes v = \underbrace{v\lambda}\alpha + \underbrace{h\mu} v = v\underbrace{\lambda\alpha + h\mu} = v\overbrace{\underbrace{b\alpha + h}\lambda}$$