

$$\text{noeth } \mathbb{G} \Rightarrow X_{\Delta \mathbb{G}}^{\geq} \text{ noeth}$$

$$\mathcal{A} \triangleleft X_{\Delta \mathbb{G}}^{\geq} \ni X\gamma = X^{\mu} \mu \gamma = X^{\bar{\gamma}} \bar{\gamma} \gamma + \sum_{\mu > \bar{\gamma}} X^{\mu} \mu \gamma$$

$$\mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\geq i} = \left\{ \begin{array}{l} 1 \in \mathcal{A} \\ \bar{1} \geq i \end{array} \right\} \triangleleft \mathbb{G} \xrightarrow{\text{noeth}} \bigvee_{\mathcal{F}_i \subset \mathcal{A}}^{\text{fin}} \left\{ 1 \in \mathcal{F}_i \right\} \mathbb{G} = \mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\geq i}$$

$$i \cdot 1 = \underbrace{X1}_{i+1} \Rightarrow \mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\geq i} \subset \mathcal{A} \cap_{i+1} X_{\Delta \mathbb{G}}^{\geq i} \xrightarrow{\text{noeth}} \bigcup_i \mathcal{A} \cap_i X_{\Delta \mathbb{G}}^{\geq i} = \mathcal{A} \cap_k X_{\Delta \mathbb{G}}^{\geq k}$$

$$\gamma \in \mathcal{A} \Rightarrow \bar{\gamma} \gamma \in \mathcal{A} \cap_{\bar{\gamma}} X_{\Delta \mathbb{G}}^{\geq \bar{\gamma}} = \mathcal{A} \cap_{k \wedge \bar{\gamma}} X_{\Delta \mathbb{G}}^{\geq k \wedge \bar{\gamma}} \Rightarrow \bigvee_{a_1}^{\mathbb{G}} \bar{\gamma} \gamma = \sum_1^{\mathcal{F}_{k \wedge \bar{\gamma}}} k \wedge \bar{\gamma} \cdot 1 a_1 \Rightarrow$$

$$\mathcal{A} \ni X\gamma - X^{\bar{\gamma} - k \wedge \bar{\gamma}} \sum_1^{\mathcal{F}_{k \wedge \bar{\gamma}}} X1 a_1$$

$$= X^{\bar{\gamma}} \sum_1^{\mathcal{F}_{k \wedge \bar{\gamma}}} k \wedge \bar{\gamma} \cdot 1 a_1 \left( = \bar{\gamma} \gamma \right) + \sum_{\mu > \bar{\gamma}} X^{\mu} \mu \gamma - X^{\bar{\gamma} - k \wedge \bar{\gamma}} \sum_1^{\mathcal{F}_{k \wedge \bar{\gamma}}} \overbrace{X^{k \wedge \bar{\gamma}} k \wedge \bar{\gamma} \cdot 1 + \sum_{\mu > k \wedge \bar{\gamma}} X^{\mu} \mu \cdot 1} a_1$$

$$= \sum_{\mu > \bar{\gamma}} X^{\mu} \mu \gamma - \sum_1^{\mathcal{F}_{k \wedge \bar{\gamma}}} \sum_{\mu > k \wedge \bar{\gamma}} X^{\left[ \bar{\gamma} - k \wedge \bar{\gamma} + \mu \right]} \left( > \bar{\gamma} \right) \mu \cdot 1 a_1 \in \left\{ \begin{array}{l} 1 \\ 1 \in \mathcal{F}_{i \wedge \bar{\gamma}} \\ i \leq k \wedge \bar{\gamma} \end{array} \right\} X_{\Delta \mathbb{G}}^{\geq}$$