

Übungen Modellierung

16.01.08

Notiztitel

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Aufgabe 19:

a) SK: "Paul geht Ski fahren"

U: "Paul hat Urlaub"

S: "Es schneit"

FR: "Paul fährt nach Frankreich"

FL: "Paul fährt nach Florida"

$$\begin{aligned} & (U \wedge S \rightarrow SK) \wedge (FR \vee FL) \wedge (FL \rightarrow \neg SK) \wedge (U \wedge \neg FL) \\ \equiv & (\neg U \vee \neg S \vee SK) \wedge (FR \vee FL) \wedge (\neg FL \vee \neg SK) \wedge U \wedge \neg FL \end{aligned}$$

$$b) \underbrace{(\neg U \vee \neg S \vee SK) \wedge (FR \vee FL) \wedge (\neg FL \vee \neg SK) \wedge U \wedge FL}_{= i\bar{F}}$$

$$\bar{F} \rightarrow \neg S \quad \equiv \quad \neg \bar{F} \vee \neg S$$

$$\neg(\neg \bar{F} \vee \neg S) \equiv \bar{F} \wedge S$$

$\{\neg U, \neg S, SK\}$

$\{FR, FL\}$

$\{\neg FL, \neg SK\}$

$\{U\}$

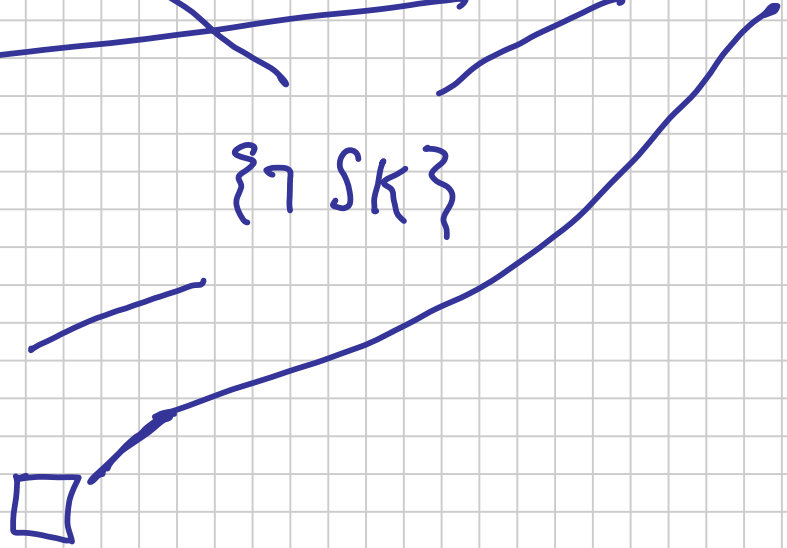
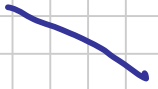
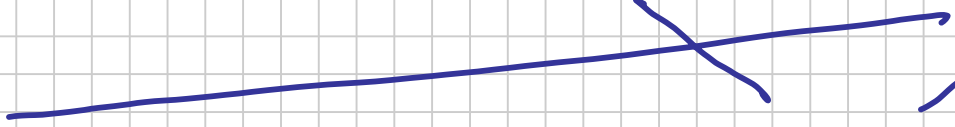
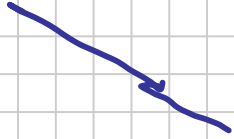
$\{FL\}$

$\{S\}$

$\{\neg S, SK\}$

$\{\neg SK\}$

$\{\neg S\}$



$$F = \{ \{ A, \neg B, C \}, \{ A, B \}, \{ B, \neg C \} \} \quad \text{Klauselmeng}$$

$$\begin{aligned} \text{Res}^1(F) &= F \cup \{ \{ A, C \}, \{ A, C, \neg C \}, \{ A, B, \neg B \} \} \\ &= \{ \{ A, \neg B, C \}, \{ A, B \}, \{ B, \neg C \}, \{ A, C \}, \{ A, C, \neg C \}, \\ &\quad \{ A, \neg B, B \} \} \end{aligned}$$

$$\begin{aligned} \text{Res}^2(F) &= \text{Res}^1(F) \cup \{ \{ A, B, \neg C \} \} \\ &= \{ \{ A, \neg B, C \}, \{ A, B \}, \{ B, \neg C \}, \{ A, C \}, \{ A, C, \neg C \}, \\ &\quad \{ A, \neg B, B \}, \{ A, B, \neg C \} \} \end{aligned}$$

$$\text{Res}^3(F) = \text{Res}^2(F) = \text{Res}^*(F) \quad \text{mit } \begin{matrix} u=2 \\ \text{kleinste Zahl } u \\ \text{Res}^u(F) = \text{Res}^*(F) \end{matrix}$$