

$\neg B \leftarrow A$   
 $B \vee \neg A$

$\forall y: \neg (p(x, y) \vee q(x, y))$   
 $\neg (p(x, y) \vee q(x, y))$

$\neg p(x, y)$   
 $\neg q(x, y)$

$\exists [x \rightarrow] (\pi [\exists_1] (p) \cup \pi [\exists_1] (q))$

*close* (pointing to  $\neg p(x, y)$ )  
*close* (pointing to  $\neg q(x, y)$ )

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Skizze 12)

$F \equiv \forall person: male(person) \vee \forall person: female(person)$   
 $\forall x: p(x) \vee \forall x: q(x)$

$Q \equiv \forall v: (p(v) \vee q(v))$

$\Pi \models Q$  ? *yes*  
 $\forall person: male(person) \vee female(person)$

$G \models F$  ? *no*

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$(\forall x: p(x)) \vee (\forall x: q(x))$   
 $\neg \forall x (p(x) \vee q(x))$   
 $\exists x: \neg (p(x) \vee q(x))$   
 $\neg (p(c) \vee q(c))$   
 $\neg p(c)$   
 $\neg q(c)$

$\forall x: p(x)$   
 $p(x_1)$   
 $\exists x_1 \rightarrow c$

$\forall x: q(x)$   
 $q(x_2)$   
 $\exists x_2 \rightarrow c$

$F \wedge \neg G$   
 Schshelle?  
 no.  
 $F \neq G$

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$G \neq F?$        $G \wedge \neg F$  schisshelle?

$\forall x: p(x) \vee q(x)$   
 $\neg (\forall x: p(x) \vee \forall x: q(x))$   
 $\neg \forall x p(x)$   
 $\neg \forall x q(x)$   
 $\neg p(c_1)$   
 $\neg q(c_2)$

$p(x_1) \vee q(x_1)$   
 $p(x_1)$   
 $\exists x_1 \rightarrow c_1$

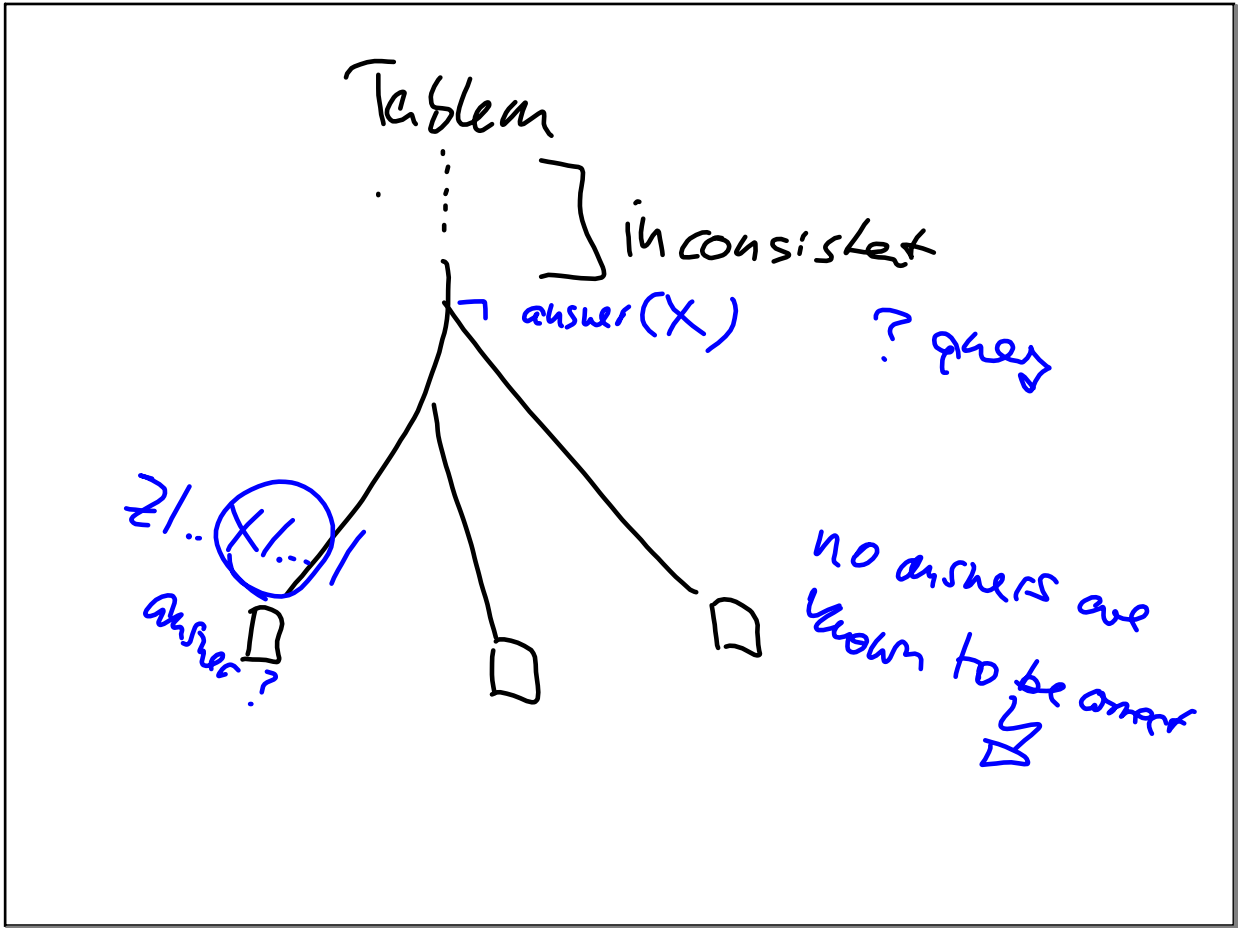
$q(x_1)$   
 $q(c_1)$

$p(x_2) \vee q(x_2)$   
 $p(x_2)$   
 $\exists x_2 \rightarrow c_2$

$q(x_2)$

Note: maybe constants  $c_1$  and  $c_2$  mean the same thing in the domain  
 we learn something about  
 we learn something about  
 don't further restrict  $c_1$  or  $c_2$  to  $x_1$  or  $x_2$ !  
 not allowed branch:  
 $q(c_1) \wedge \neg p(c_1) \wedge p(c_2) \wedge \neg q(c_2)$   
 satisfies G  
 but not  $\neg F$

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