

Resolution:

KB:

$$1. \neg D(x) \vee \neg P(x,y) \vee L(F(x,y))$$

$$2. \neg D(x) \vee \neg P(x,y) \vee P(F(x,y),y)$$

$$3. D(a)$$

$$4. P(a,s)$$

$$5. \neg L(x) \vee \neg P(x,s)$$

$$6. 2. \text{ and } 4. \Rightarrow \neg D(a) \vee P(F(a,s),s)$$

$$7. 6. \text{ and } 3. \Rightarrow P(F(a,s),s)$$

$$8. 7. \text{ and } 5 \Rightarrow \neg L(F(a,s))$$

$$9. 1. \text{ and } 4. \Rightarrow \neg D(a) \vee L(F(a,s))$$

$$10. 9. \text{ and } 3. \Rightarrow L(F(a,s))$$

$$11. 8. \text{ and } 10. \Rightarrow \underbrace{\neg L(F(a,s)) \wedge L(F(a,s))}_{\text{Widerspruch!}}$$

Also muss x wahr sein!