课件P.85：Some patients like all doctors. →

$\exists x(P(x) \wedge \forall y(D(y) \rightarrow L(x,y)))$

⇒ 1. $P(a)$

2. $(\neg D(y), L(a,y))$

No patient likes any quack(庸医). →

$\neg\exists x \exists y (P(x) \wedge Q(y) \wedge L(x,y))$

$\forall x \forall y \neg(P(x) \wedge Q(y) \wedge L(x,y))$

⇒ 3. $(\neg P(u), \neg Q(v), \neg L(u,v))$

Therefore no doctor is a quake. →

$\neg\exists x (D(x) \wedge Q(x))$

作为询问，先否定后加入KB：$\exists x(D(x) \wedge Q(x))$

⇒ 4. $D(b)$

5. $Q(b)$

$R[2a, 4\bullet]\{y=b\}$ ⇒ 6. $L(a,b)$ ⋮ $R[3c, 6\bullet]\{u=a, v=b\}$ ⇒ 7. $(\neg P(a), \neg Q(b))$

$R[1\bullet, 7a]$ ⇒ 8. $\neg Q(b)$ ⋮ $R[5\bullet, 8\bullet]$ ⇒ 9. $\{\}$.

课件P.86: literate 受过教育的，学者.

Whoever can read is literate. $\forall x(R(x) \to L(x)) \Rightarrow 1.\ (\neg R(x), L(x))$

Dophins are not literate. $\forall x(D(x) \to \neg L(x)) \Rightarrow 2.\ (\neg D(y), \neg L(y))$

Flipper is an intelligent dolphin. $D(\text{Flipper}) \wedge I(\text{Flipper})$

$\Rightarrow$ 3. $D(\text{Flipper})$

4. $I(\text{Flipper})$

Who is intelligent but cannot read. $\exists x(I(x) \wedge \neg R(x) \wedge \neg \text{answer}(x))$

$\Rightarrow 5.\ (\neg I(z), R(z), \text{answer}(z))$.

$R[4,5]\{z = \text{Flipper}\} \Rightarrow 6.\ (R(\text{Flipper}, \text{answer}(\text{Flipper}))$

$R[3,2a]\{y = \text{Flipper}\} \Rightarrow 7.\ \neg L(\text{Flipper})$

$R[1a,7]\{x = \text{Flipper}\} \Rightarrow 8.\ \neg R(\text{Flipper})$

$R[6a,8] \Rightarrow 9.\ \text{answer}(\text{Flipper})$.