```
⊢ ∀[P,Q:ℙ].  (((¬P) ∧ (¬Q)) ⇒ (¬(P ∨ Q)))
|
BY RepeatFor 2 ((UD THENA Auto))
|
[1]. P: ℙ
[2]. Q: ℙ
⊢ ((¬P) ∧ (¬Q)) ⇒ (¬(P ∨ Q))
|
BY RepeatFor 2 ((D 0 THENA Auto))
|
3. (¬P) ∧ (¬Q)
4. P ∨ Q
⊢ False
|
BY D 3
|
3. ¬P
4. ¬Q
5. P ∨ Q
⊢ False
|
BY D 5
|\
| 5. P
| ⊢ False
| |
1 BY (Unfold ‘not‘ 3 THEN D 3)
| |\
| | 3. ¬Q
| | 4. P
| | ⊢ P
| | |
1 2 BY NthHyp 4
|  \
|   3. ¬Q
|   4. P
|   5. False
|   ⊢ False
|   |
1   BY NthHyp 5
 \
  5. Q
  ⊢ False
  |
  BY (Unfold ‘not‘ 4 THEN D 4)
  |\
  | 4. Q
  | ⊢ Q
  | |
  1 BY NthHyp 4
   \
    4. Q
    5. False
```

```
    ⊢ False
    |
    BY NthHyp 5
```

```
Extract: λf,g. let np,nq = f in case g of inl(p) => np p | inr(q) => nq q
    where f : (¬P) ∧ (¬Q)
          g : P ∨ Q
         np : ¬P ≡ (P ⇒ False)
         nq : ¬Q ≡ (Q ⇒ False)
          p : P
          q : Q
```