

```

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

```

```
| ⊢ Q
| |
1 BY NthHyp 3
  \
  3. Q
  4. False
  ⊢ False
  |
  BY NthHyp 4
```

```
Extract: λf.<λp.(f (inl p)), λq.(f (inr q ))>
  where f : ¬(P ∨ Q) ≡ ((P ∨ Q) ⇒ False)
        p : P
        q : Q
```