

```

├  $\forall[P:\mathbb{P}]. (\neg\neg(P \vee (\neg P)))$ 
|
BY (UD THENA Auto)
|
[1].  $P: \mathbb{P}$ 
├  $\neg\neg(P \vee (\neg P))$ 
|
BY (D 0 THENA Auto)
|
2.  $\neg(P \vee (\neg P))$ 
├ False
|
BY Duplicate 2
|
3.  $\neg(P \vee (\neg P))$ 
├ False
|
BY (Unfold 'not' 3 THEN D 3)
| \
| ─┬─  $P \vee (P \Rightarrow \text{False})$ 
| |
1 BY (OrRight THENA Auto)
| |
| ─┬─  $P \Rightarrow \text{False}$ 
| |
1 BY (D 0 THENA Auto)
| |
| 3.  $P$ 
| ─┬─ False
| |
1 BY (Unfold 'not' 2 THEN D 2)
| | \
| | ─┬─ 2.  $P$ 
| | ─┬─  $P \vee (P \Rightarrow \text{False})$ 
| | |
1 2 BY (OrLeft THENA Auto)
| | |
| | ─┬─  $P$ 
| | |
1 2 BY NthHyp 2
| | \
| | ─┬─ 2.  $P$ 
| | ─┬─ 3. False
| | ─┬─ False
| | |
1 BY NthHyp 3
| \
| ─┬─ 3. False
| ─┬─ False
|
BY NthHyp 3

```

```
Extract: λf.(f (inr (λp.(f (inl p)))) )
  where f : ¬(P ∨ (¬P)) ≡ ((P ∨ (¬P)) ⇒ False)
        p : P
```