

```

┆  $\forall [P, Q: \mathbb{P}]. ((P \Rightarrow Q) \Rightarrow (\neg Q) \Rightarrow (\neg P))$ 
|
BY RepeatFor 2 ((UD THENA Auto))
|
[1]. P:  $\mathbb{P}$ 
[2]. Q:  $\mathbb{P}$ 
┆  $(P \Rightarrow Q) \Rightarrow (\neg Q) \Rightarrow (\neg P)$ 
|
BY RepeatFor 2 ((D 0 THENA Auto))
|
3.  $P \Rightarrow Q$ 
4.  $\neg Q$ 
┆  $\neg P$ 
|
BY Unfold 'not' 0
|
┆  $P \Rightarrow \text{False}$ 
|
BY (D 0 THENA Auto)
|
5. P
┆ False
|
BY Unfold 'not' 4
|
4.  $Q \Rightarrow \text{False}$ 
┆ False
|
BY D 3
| \
| 3.  $Q \Rightarrow \text{False}$ 
| 4. P
| ┆ P
| |
1 BY NthHyp 4
| \
| 3.  $Q \Rightarrow \text{False}$ 
| 4. P
| 5. Q
| ┆ False
| |
BY D 3
| \
| 3. P
| 4. Q
| ┆ Q
| |
1 BY NthHyp 4
| \
| 3. P
| 4. Q
| 5. False
| ┆ False

```

|  
BY NthHyp 5

Extract:  $\lambda pq, nq, p. (nq (pq p))$   
where  $pq : P \Rightarrow Q$   
       $nq : \neg Q \equiv (Q \Rightarrow \text{False})$   
       $p : P$