```
contrapositive  THM

⊢  Dec(P) ⇒ Dec(Q) ⇒ ((P ⇒ Q) ⟺ (¬Q ⇒ ¬P))  by GenUnivCD
|
1. P : Prop
2. Q : Prop
3. Dec(P)
4. Dec(Q)
⊢  (P ⇒ Q) ⟺ (¬Q ⇒ ¬P)  by UnfoldTopAb 3 THEN UnfoldTopAb 4
|
3. P ∨ ¬P
4. Q ∨ ¬Q
⊢  (P ⇒ Q) ⟺ (¬Q ⇒ ¬P)  by Analyze 0 THEN Analyze 0 THEN Analyze 0
|
|\
| 5. P ⇒ Q
| 6. ¬Q
| ⊢  ¬P  by Analyze 3
| |
| 3. P
| 4. Q ∨ ¬Q
| 5. P ⇒ Q
| 6. ¬Q
| ⊢  ¬P  by FwdThru 5 [3]
| |
| 7. Q
| ⊢  ¬P  by UnfoldTopAb 6 THEN FwdThru 6 [7] THEN Trivial
|
.\
. 5. ¬Q ⇒ ¬P
. 6. P
. ⊢  Q  by Analyze 4
. |
. 4. ¬Q
. 5. ¬Q ⇒ ¬P
. 6. P
. ⊢  Q  by FwdThru 5 [4]
. |
. 7. ¬P
. ⊢  Q  by UnfoldTopAb 7 THEN FwdThru 7 [6] THEN Trivial
END
```