

```

⊢ ∀[A,B:ℙ]. {A ∧ B ⇔ ¬(A ⇒ (¬B))}
|
BY (D 0 THENA Auto)
| \
| 1. A: ℙ
| ⊢ ∀[B:ℙ]. {A ∧ B ⇔ ¬(A ⇒ (¬B))}
| |
1 BY (D 0 THENA Auto)
| | \
| | 2. B: ℙ
| | ⊢ {A ∧ B ⇔ ¬(A ⇒ (¬B))}
| | |
1 2 BY RepeatFor 4 ((D 0 THENA Auto))
| | | \
| | | 3. A ∧ B
| | | ⊢ {¬(A ⇒ (¬B))}
| | | |
1 2 3 BY D 3
| | | |
| | | 3. A
| | | 4. B
| | | ⊢ {¬(A ⇒ (¬B))}
| | | |
1 2 3 BY (ElimClassical THENA Auto)
| | | |
| | | ⊢ ¬(A ⇒ (¬B))
| | | |
1 2 3 BY (D 0 THENA Auto)
| | | |
| | | 5. A ⇒ (¬B)
| | | ⊢ False
| | | |
1 2 3 BY D 5
| | | | \
| | | | ⊢ A
| | | | |
1 2 3 4 BY Hypothesis
| | | | \
| | | | 5. ¬B
| | | | ⊢ False
| | | | |
1 2 3 BY D 5
| | | |
| | | | ⊢ B
| | | | |
1 2 3 BY Hypothesis
| | | | \
| | | | 3. ¬(A ⇒ (¬B))
| | | | ⊢ {A ∧ B}
| | | | |
1 2 BY (ClassicalContradiction THENA Auto)
| | | |
| | | 4. ¬(A ∧ B)
| | | ⊢ {A ∧ B}
| | | |
1 2 BY D 3

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| | |
| | 3.  $\neg(A \wedge B)$ 
| |  $\vdash A \Rightarrow (\neg B)$ 
| | |
1 2 BY RepeatFor 2 ((D 0 THENA Auto))
| | |
| | 4. A
| | 5. B
| |  $\vdash \text{False}$ 
| | |
1 2 BY D 3
| | |
| | 3. A
| | 4. B
| |  $\vdash A \wedge B$ 
| | |
1 2 BY D 0
| | | \
| | |  $\vdash A$ 
| | | |
1 2 3 BY Hypothesis
| | | \
| | |  $\vdash B$ 
| | | |
1 2 BY Hypothesis
| | \
| 2. B:  $\mathbb{P}$ 
| 3.  $\{x:\text{Unit} \mid A \wedge B \iff \neg(A \Rightarrow (\neg B))\}$ 
|  $\vdash Ax \in \{x:\text{Unit} \mid A \wedge B \iff \neg(A \Rightarrow (\neg B))\}$ 
| |
1 BY Auto
\
1. A:  $\mathbb{P}$ 
2. B:  $\mathbb{P}$ 
3.  $\{x:\text{Unit} \mid A \wedge B \iff \neg(A \Rightarrow (\neg B))\}$ 
 $\vdash Ax \in \{x:\text{Unit} \mid A \wedge B \iff \neg(A \Rightarrow (\neg B))\}$ 
|
BY Auto

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