```
⊢ ∀[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 (ElimClassical THENA Auto)
| | | |
| | | ⊢ ¬((¬A) ∨ (¬B))
| | | |
1 2 3 BY (D 0 THENA Auto)
| | | |
| | | 4. (¬A) ∨ (¬B)
| | | ⊢ False
| | | |
1 2 3 BY D 3
| | | |
| | | 3. A
| | | 4. B
| | | 5. (¬A) ∨ (¬B)
| | | ⊢ False
| | | |
1 2 3 BY D 5
| | | |\
| | | | 5. ¬A
| | | | ⊢ False
| | | | |
1 2 3 4 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 RepeatFor 2 (D 0)
| |   |\
| |   | ⊢ {A}
| |   | |
1 2   3 BY (ClassicalContradiction THENA Auto)
| |   | |
| |   | 4. ¬A
| |   | ⊢ {A}
| |   | |
1 2   3 BY D 3
| |   | |
| |   | 3. ¬A
| |   | ⊢ (¬A) ∨ (¬B)
| |   | |
1 2   3 BY (OrLeft THENA Auto)
| |   | |
| |   | ⊢ ¬A
| |   | |
1 2   3 BY Hypothesis
| |    \
| |     ⊢ {B}
| |     |
1 2     BY (ClassicalContradiction THENA Auto)
| |     |
| |     4. ¬B
| |     ⊢ {B}
| |     |
1 2     BY D 3
| |     |
| |     3. ¬B
| |     ⊢ (¬A) ∨ (¬B)
| |     |
1 2     BY (OrRight THENA Auto)
| |     |
| |     ⊢ ¬B
| |     |
1 2     BY Hypothesis
|  \
|   2. B: ℙ
|   3. {x:Unit| A ∧ B ⟺ ¬((¬A) ∨ (¬B))}
|   ⊢ Ax ∈ {x:Unit| A ∧ B ⟺ ¬((¬A) ∨ (¬B))}
|   |
1   BY Auto
 \
  1. A: ℙ
  2. B: ℙ
  3. {x:Unit| A ∧ B ⟺ ¬((¬A) ∨ (¬B))}
  ⊢ Ax ∈ {x:Unit| A ∧ B ⟺ ¬((¬A) ∨ (¬B))}
  |
  BY Auto
```