Inference at $*$ 1 0
of proof for Lemma equiv_rel_iff:

$\vdash$ Refl($\mathbb{P}$;A,B.$A \iff B$) & Sym($\mathbb{P}$;A,B.$A \iff B$) & Trans($\mathbb{P}$;A,B.$A \iff B$)
by PERMUTE{1:n,
2:n,
1:n,
2:n,
3:n,
4:n,
5:n,
6:n,
7:n,
8:n,
9:n,
3:n,
10:n,
11:n,
12:n,
13:n,
14:n,
15:n,
16:n,
9:n,
3:n}

1:

1. $a : \mathbb{P}$
2. a
$\vdash a$

2: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
$\vdash a \in \mathbb{P}$

3: . . . . .wf. . . . . NILNIL

$\vdash \mathbb{P} \in$ Type

4:

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$
4. b

$\vdash a$

5: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$

$\vdash b \in \mathbb{P}$

6:

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$
4. a

$\vdash b$

7: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $a \iff b$

$\vdash a \in \mathbb{P}$

8: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$

$\vdash (a \iff b) \in \mathbb{P}$

9: . . . . .wf. . . . . NILNIL

1. $\mathbb{P}$

$\vdash \mathbb{P} \in \text{Type}$

10:

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $c : \mathbb{P}$
4. $a \iff b$
5. $b \iff c$
6. a

$\vdash c$

11: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $c : \mathbb{P}$
4. $a \iff b$
5. $b \iff c$

$\vdash a \in \mathbb{P}$

12:

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $c : \mathbb{P}$
4. $a \iff b$
5. $b \iff c$
6. c

$\vdash a$

13: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $c : \mathbb{P}$
4. $a \iff b$
5. $b \iff c$

$\vdash c \in \mathbb{P}$

14: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $c : \mathbb{P}$
4. $a \iff b$

$\vdash (b \iff c) \in \mathbb{P}$

15: . . . . .wf. . . . . NILNIL

1. $a : \mathbb{P}$
2. $b : \mathbb{P}$
3. $\mathbb{P}$

$\vdash (a \iff b) \in \mathbb{P}$

16: . . . . .wf. . . . . NILNIL

1. $\mathbb{P}$
2. $\mathbb{P}$

$\vdash \mathbb{P} \in \text{Type}$

.

---

http://www.nuprl.org/FDLcontent/p0_942988_/p121_81279_{equiv_rel_iff}1_0.html