

Inference at * 1 1 1 0
of proof for Lemma absval_elim:

1. $P : \mathbb{Z} \rightarrow \mathbb{P}$
2. $x : \mathbb{N}$
 $\vdash (P(\text{if } 0 \leq_z x \text{ then } x \text{ else } -x \text{ fi})) \Rightarrow (P(x))$
by PERMUTE{1:n,

2:n,
3:n,
4:n,
5:n,
6:n,
7:n,
8:n,
9:n,
10:n,
11:n,
12:n,
10:n,
13:n,
11:n,
14:n,
15:n,
16:n,
17:n,
18:n,
16:n,
15:n,
19:n}

1:wf..... NILNIL

$\vdash 0 \leq_z x \in \mathbb{B}$

2:wf..... NILNIL

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

3:wf..... NILNIL

3. $0 \leq_z x = \text{tt}$

$\vdash (0 \leq_z x = \text{tt}) \in \mathbb{P}_1$

4:wf..... NILNIL

3. $0 \leq_z x = \text{tt}$

$\vdash (\uparrow 0 \leq_z x) \in \mathbb{P}_1$

5:wf..... NILNIL

3. $0 \leq_z x = \text{tt}$

$\vdash (0 \leq x) \in \mathbb{P}_1$

6:wf..... NILNIL

3. $0 \leq_z x = \text{tt}$

$\vdash 0 \leq_z x \in \mathbb{B}$

7:wf..... NILNIL

3. $0 \leq_z x = \text{tt}$

$\vdash 0 \in \mathbb{Z}$

8:wf..... NILNIL

3. $0 \leq_z x = \text{tt}$

$\vdash x \in \mathbb{Z}$

9:

3. $0 \leq x$

$\vdash (P(\text{if tt then } x \text{ else } -x \text{ fi})) \Rightarrow (P(x))$

10:wf..... NILNIL

3. $0 \leq_z x = \text{ff}$

$\vdash (0 \leq_z x = \text{ff}) \in \mathbb{P}_1$

11:wf..... NILNIL

3. $0 \leq_z x = \text{ff}$

$\vdash (\uparrow x <_z 0) \in \mathbb{P}_1$

12:wf..... NILNIL

3. $0 \leq_z x = \text{ff}$

$\vdash (x < 0) \in \mathbb{P}_1$

13:wf..... NILNIL

3. $0 \leq_z x = \text{ff}$

$\vdash (\uparrow(\neg_b 0 \leq_z x)) \in \mathbb{P}_1$

14:wf..... NILNIL

3. $0 \leq_z x = \text{ff}$

$\vdash 0 \leq_z x \in \mathbb{B}$

15:wf..... NILNIL

3. $0 \leq_z x = \text{ff}$

$\vdash 0 \in \mathbb{Z}$

16:wf..... NILNIL

3. $0 \leq_z x = \text{ff}$
 $\vdash x \in \mathbb{Z}$
 17:antecedent..... NILNIL

 3. $0 \leq_z x = \text{ff}$
 $\vdash \text{True}$
 18:wf..... NILNIL

 3. $0 \leq_z x = \text{ff}$
 4. $(\uparrow(\neg_b 0 \leq_z x)) = (\uparrow x <_z 0)$
 $\vdash \mathbb{P}_1 = \mathbb{P}_1$
 19:

 3. $x < 0$
 $\vdash (P(\text{if ff then } x \text{ else } -x \text{ fi})) \Rightarrow (P(x))$
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