

Inference at * 1 0
of proof for Lemma absval_lbound:

1. $i : \mathbb{Z}$
2. $n : \mathbb{N}$
 $\vdash (|i| > n) \iff ((i < (-n)) \vee (i > n))$
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

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

2:wf..... NILNIL

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

3:wf..... NILNIL

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

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

4:wf..... NILNIL

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

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

5:wf..... NILNIL

3. $0 \leq_Z i = \text{tt}$

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

6:wf..... NILNIL

3. $0 \leq_Z i = \text{tt}$

$\vdash 0 \leq_Z i \in \mathbb{B}$

7:wf..... NILNIL

3. $0 \leq_Z i = \text{tt}$

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

8:wf..... NILNIL

3. $0 \leq_Z i = \text{tt}$

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

9:truecase..... NILNIL

3. $0 \leq i$

$\vdash (i > n) \iff ((i < (-n)) \vee (i > n))$

10:wf..... NILNIL

3. $0 \leq_Z i = \text{ff}$

$\vdash (0 \leq_Z i = \text{ff}) \in \mathbb{P}_1$

11:wf..... NILNIL

3. $0 \leq_Z i = \text{ff}$

$\vdash (\uparrow i <_Z 0) \in \mathbb{P}_1$

12:wf..... NILNIL

3. $0 \leq_Z i = \text{ff}$

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

13:wf..... NILNIL

3. $0 \leq_Z i = \text{ff}$

$\vdash (\uparrow(\neg_b 0 \leq_Z i)) \in \mathbb{P}_1$

14:wf..... NILNIL

3. $0 \leq_Z i = \text{ff}$

$\vdash 0 \leq_Z i \in \mathbb{B}$

15:wf..... NILNIL

3. $0 \leq_Z i = \text{ff}$

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

16:wf..... NILNIL

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

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

 3. $0 \leq_Z i = \text{ff}$
 4. $(\uparrow(\neg_b 0 \leq_Z i)) = (\uparrow i <_Z 0)$
 $\vdash \mathbb{P}_1 = \mathbb{P}_1$
 19:falsecase..... NILNIL

 3. $i < 0$
 $\vdash ((-i) > n) \iff ((i < (-n)) \vee (i > n))$
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