

# t131\_pboole

(TMcwmorwKHr8Pf7kt7APPq6Wd3esjDE5Rjg)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.(r1\_tarski X0 k1\_xboole\_0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2.((v1\_relat\_1 \\ X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ ((r2\_pboole X0 X1 X2) \Leftrightarrow (\forall X3.(X3 \in X0) \Rightarrow (r1\_tarski (k1\_funct\_1 \\ X1 X3) (k1\_funct\_1 X2 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow ((v2\_relat\_1 X1) \Leftrightarrow (\forall X2. \\ \neg (X2 \in X0) \wedge (v1\_xboole\_0 (k1\_funct\_1 X1 X2)))) \end{aligned} \quad (5)$$

## Theorem 1

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge \\ (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0))) \Rightarrow (\forall X2.((v1\_relat\_1 \\ X2) \wedge ((v4\_relat\_1 X2 X0) \wedge ((v1\_funct\_1 X2) \wedge (v1\_partfun1 X2 X0)))) \Rightarrow \\ (((v2\_relat\_1 X1) \wedge (r2\_pboole X0 X1 X2)) \Rightarrow (v2\_relat\_1 X2))) \end{aligned}$$