

t59_pboole
(TMRxjzQ3nbQVczb5UgoT1jvXK9D3Gu1qUd5)

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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 $r6_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pboole : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. k1_funct_1 (k1_pboole X1) X0 = k1_xboole_0 \quad (1)$$

Assume the following.

$$\forall X0. k4_xboole_0 X0 k1_xboole_0 = X0 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 X1) \wedge ((v4_relat_1 \\ & X1 X0) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \wedge ((v1_relat_1 \\ & X2) \wedge ((v4_relat_1 X2 X0) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X0)))))) \Rightarrow \\ & ((r6_pboole X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k6_subset_1 X0 X1 = k4_xboole_0 X0 X1 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_relat_1 (k1_pboole X0)) \wedge ((v4_relat_1 (k1_pboole \\ & X0) X0) \wedge ((v1_funct_1 (k1_pboole X0)) \wedge (v1_partfun1 (k1_pboole \\ & X0) X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\
& (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(\forall X2.((v1_relat_1 \\
& X2)\wedge((v4_relat_1 X2 X0)\wedge((v1_funct_1 X2)\wedge(v1_partfun1 X2 X0))))\Rightarrow \\
& (\forall X3.((v1_relat_1 X3)\wedge((v4_relat_1 X3 X0)\wedge((v1_funct_1 \\
& X3)\wedge(v1_partfun1 X3 X0))))\Rightarrow((X3 = k4_pboole X0 X1 X2)\Leftrightarrow(\forall X4. \\
& (X4 \in X0)\Rightarrow(k1_funct_1 X3 X4 = k6_subset_1 (k1_funct_1 X1 X4) (k1_funct_1 \\
& X2 X4))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.k1_pboole X0 = k7_funcop_1 X0 k1_xboole_0 \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge \\
& (v1_funct_1 X1)\wedge(v1_partfun1 X1 X0)))\Rightarrow(r6_pboole X0 (k4_pboole \\
& X0 X1 (k1_pboole X0)) X1)
\end{aligned}$$