

t13_pboole

(TMYkc9bEeEiv4PjTqP9MvvyVFDhNeCAfZEO)

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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 $r2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\forall X0. \forall X1. (r1_tarski\ X0\ X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1\ X1) \wedge ((v4_relat_1\ X1\ X0) \wedge (\\ (v1_funct_1\ X1) \wedge (v1_partfun1\ X1\ X0)))) \Rightarrow (\forall X2. ((v1_relat_1 \\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge ((v1_funct_1\ X2) \wedge (v1_partfun1\ X2\ X0)))) \Rightarrow \\ ((r2_pboole\ X0\ X1\ X2) \Leftrightarrow (\forall X3. (X3 \in X0) \Rightarrow (r1_tarski\ (k1_funct_1 \\ X1\ X3)\ (k1_funct_1\ X2\ X3)))))) \end{aligned} \quad (2)$$

Theorem 1

$$\begin{aligned} \forall X0. \forall X1. ((v1_relat_1\ X1) \wedge ((v4_relat_1\ X1\ X0) \wedge (\\ (v1_funct_1\ X1) \wedge (v1_partfun1\ X1\ X0)))) \Rightarrow (\forall X2. ((v1_relat_1 \\ X2) \wedge ((v4_relat_1\ X2\ X0) \wedge ((v1_funct_1\ X2) \wedge (v1_partfun1\ X2\ X0)))) \Rightarrow \\ (\forall X3. ((v1_relat_1\ X3) \wedge ((v4_relat_1\ X3\ X0) \wedge ((v1_funct_1 \\ X3) \wedge (v1_partfun1\ X3\ X0)))) \Rightarrow (((r2_pboole\ X0\ X1\ X2) \wedge (r2_pboole \\ X0\ X2\ X3)) \Rightarrow (r2_pboole\ X0\ X1\ X3)))) \end{aligned}$$