t125_pboole (TMNUHMGgDeVdrNHFSCx-eENw3fiAhgo3Yo1w)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. 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 $r3\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_pboole : \iota \Rightarrow \iota$ be given. Let $r1\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_partfun1\ X1\ X0)))) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_partfun1\ X2\ X0)))) \Rightarrow (\forall X3.((v1\_relat\_1\ X3) \wedge ((v4\_relat\_1\ X3\ X0) \wedge ((v1\_funct\_1\ X3) \wedge (v1\_partfun1\ X3\ X0)))) \Rightarrow ((r1\_pboole\ X0\ X1\ (k3\_pboole\ X0\ X2\ X3)) \Leftrightarrow ((r1\_pboole\ X0\ X1\ X2) \wedge (r1\_pboole\ X0\ X1\ X3)))))) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_partfun1\ X1\ X0)))) \Rightarrow (\neg r3\_pboole\ X0\ X1\ (k1\_pboole\ X0))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0) \wedge (((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_partfun1\ X1\ X0)))) \wedge ((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_partfun1\ X2\ X0)))))) \Rightarrow ((r3\_pboole\ X0\ X1\ X2) \Leftrightarrow (r1\_pboole\ X0\ X1\ X2)) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k1\_pboole\ X0)) \wedge ((v4\_relat\_1\ (k1\_pboole\ X0)\ X0) \wedge ((v1\_funct\_1\ (k1\_pboole\ X0)) \wedge (v1\_partfun1\ (k1\_pboole\ X0)\ X0))) \tag{4}$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0\ X0)\Rightarrow(\forall X1.((v1_relat_1\ X1)\wedge(
(v4_relat_1\ X1\ X0)\wedge((v1_funct_1\ X1)\wedge(v1_partfun1\ X1\ X0))))\Rightarrow(
\forall X2.((v1_relat_1\ X2)\wedge((v4_relat_1\ X2\ X0)\wedge((v1_funct_1\
X2)\wedge(v1_partfun1\ X2\ X0))))\Rightarrow(\forall X3.((v1_relat_1\ X3)\wedge((v4_relat_1\
X3\ X0)\wedge((v1_funct_1\ X3)\wedge(v1_partfun1\ X3\ X0))))\Rightarrow(\neg(r3_pboole\
X0\ X1\ X2)\wedge((r3_pboole\ X0\ X1\ X3)\wedge(k3_pboole\ X0\ X2\ X3 = k1_pboole\ X0))))))$$