t1_groeb_3 (TMHnthXqLdTwN-fQSXoS2Gye1whRj3KFM14d)

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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 $v4\_valued\_0 : \iota \Rightarrow o$ be given. Let $v2\_pre\_poly : \iota \Rightarrow o$ be given. Let $k1\_groeb\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11\_pre\_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r6\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3\_pre\_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_valued\_0 : \iota \Rightarrow o$ be given. Let $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_valued\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge ((v1\_partfun1\ X1\ X0) \wedge ((v4\_valued\_0\ X1) \wedge (v2\_pre\_poly\ X1)))))) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge ((v1\_partfun1\ X2\ X0) \wedge ((v4\_valued\_0\ X2) \wedge (v2\_pre\_poly\ X2)))))) \Rightarrow (\forall X3.((v1\_relat\_1\ X3) \wedge ((v4\_relat\_1\ X3\ X0) \wedge ((v1\_funct\_1\ X3) \wedge ((v1\_partfun1\ X3\ X0) \wedge ((v4\_valued\_0\ X3) \wedge (v2\_pre\_poly\ X3)))))) \Rightarrow ((r6\_pboole\ X0\ X1\ (k11\_pre\_poly\ X0\ X2\ X3)) \Rightarrow (r3\_pre\_poly\ X0\ X2\ X1))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_partfun1\ X1\ X0)))) \wedge ((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_partfun1\ X2\ X0))))) \Rightarrow (r6\_pboole\ X0\ X1\ X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1) \wedge ((v4\_relat\_1\ X1\ X0) \wedge ((v1\_funct\_1\ X1) \wedge ((v1\_partfun1\ X1\ X0) \wedge (v1\_valued\_0\ X1))))) \wedge ((v1\_relat\_1\ X2) \wedge ((v4\_relat\_1\ X2\ X0) \wedge ((v1\_funct\_1\ X2) \wedge ((v1\_partfun1\ X2\ X0) \wedge (v1\_valued\_0\ X2)))))) \Rightarrow (k11\_pre\_poly\ X0\ X1\ X2 = k1\_valued\_1\ X1\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\exists X1.(v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v4\_valued\_0\ X1)))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v4\_valued\_0\ X1)\wedge(v2\_pre\_poly\ X1))))))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1\ X2\ X0)\wedge((v4\_valued\_0\ X2)\wedge(v2\_pre\_poly\ X2)))))))\Rightarrow((v1\_relat\_1\ (k1\_valued\_1\ X1\ X2))\wedge((v1\_funct\_1\ (k1\_valued\_1\ X1\ X2))\wedge(v2\_pre\_poly\ (k1\_valued\_1\ X1\ X2)))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v4\_valued\_0\ X1)))))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1\ X2\ X0)\wedge(v4\_valued\_0\ X2))))))\Rightarrow((v1\_relat\_1\ (k1\_valued\_1\ X1\ X2))\wedge((v1\_funct\_1\ (k1\_valued\_1\ X1\ X2))\wedge(v4\_valued\_0\ (k1\_valued\_1\ X1\ X2)))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v1\_valued\_0\ X1)))))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1\ X2\ X0)\wedge(v1\_valued\_0\ X2))))))\Rightarrow((v1\_relat\_1\ (k11\_pre\_poly\ X0\ X1\ X2))\wedge((v4\_relat\_1\ (k11\_pre\_poly\ X0\ X1\ X2)\ X0)\wedge((v1\_funct\_1\ (k11\_pre\_poly\ X0\ X1\ X2))\wedge(v1\_partfun1\ (k11\_pre\_poly\ X0\ X1\ X2)\ X0)))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v4\_valued\_0\ X1)\wedge(v2\_pre\_poly\ X1))))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1\ X2\ X0)\wedge((v4\_valued\_0\ X2)\wedge(v2\_pre\_poly\ X2))))))\Rightarrow((r3\_pre\_poly\ X0\ X2\ X1)\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v4\_relat\_1\ X3\ X0)\wedge((v1\_funct\_1\ X3)\wedge((v1\_partfun1\ X3\ X0)\wedge((v4\_valued\_0\ X3)\wedge(v2\_pre\_poly\ X3))))))\Rightarrow((X3 = k1\_groeb\_2\ X0\ X1\ X2)\Leftrightarrow(r6\_pboole\ X0\ (k11\_pre\_poly\ X0\ X2\ X3)\ X1))))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_valued\_0\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1))))\Rightarrow(k1\_valued\_1\ X0\ X1 = k1\_valued\_1\ X1\ X0) \tag{9}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v4\_valued\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v3\_valued\_0\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v3\_valued\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_valued\_0\ X0)) \tag{11}$$

Theorem 1

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge((v4\_valued\_0\ X1)\wedge(v2\_pre\_poly\ X1))))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1\ X2\ X0)\wedge((v4\_valued\_0\ X2)\wedge(v2\_pre\_poly\ X2))))))\Rightarrow(k1\_groeb\_2\ X0\ (k11\_pre\_poly\ X0\ X1\ X2)\ X2 = X1))$$