t62_funct_4 (TMUYx9hrZYMKJhBTmVxwxL6QrzEjacYDi8G)

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Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k4\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X1\ X2)) \Rightarrow (r1\_tarski\ X0\ X2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski\ X0\ X1 = k2\_xboole\_0\ (k1\_tarski\ X0)\ (k1\_tarski\ X1) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (r1\_tarski\ (k10\_xtuple\_0\ (k1\_funct\_4\ X0\ X1))\ (k2\_xboole\_0\ (k10\_xtuple\_0\ X0)\ (k10\_xtuple\_0\ X1)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X2\ X3)) \Rightarrow (r1\_tarski\ (k2\_xboole\_0\ X0\ X2)\ (k2\_xboole\_0\ X1\ X3)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(k9\_xtuple\_0\ (k2\_funcop\_1\ X0\ X1) = X0) \wedge (r1\_tarski\ (k10\_xtuple\_0\ (k2\_funcop\_1\ X0\ X1))\ (k1\_tarski\ X1)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.k7\_funcop\_1\ X0\ X1 = k2\_funcop\_1\ X0\ X1 \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(v1\_relat\_1\ (k4\_funct\_4\ X0\ X1\ X2\ X3))\wedge(v1\_funct\_1\ (k4\_funct\_4\ X0\ X1\ X2\ X3)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ (k16\_funcop\_1\ X0\ X1))\wedge(v1\_funct\_1\ (k16\_funcop\_1\ X0\ X1)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.k16\_funcop\_1\ X0\ X1 = k7\_funcop\_1\ (k1\_tarski\ X0)\ X1 \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.k4\_funct\_4\ X0\ X1\ X2\ X3 = k1\_funct\_4\ (k16\_funcop\_1\ X0\ X2)\ (k16\_funcop\_1\ X1\ X3) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((X2 = k1\_funct\_4\ X0\ X1)\Leftrightarrow((k9\_xtuple\_0\ X2 = k2\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1))\wedge(\forall X3.(X3 \in k2\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1))\Rightarrow(((X3 \in k9\_xtuple\_0\ X1)\Rightarrow(k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X1\ X3))\wedge((\neg X3 \in k9\_xtuple\_0\ X1)\Rightarrow(k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X0\ X3)))))))) \tag{11}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.(k9\_xtuple\_0\ (k4\_funct\_4\ X0\ X1\ X2\ X3) = k2\_tarski\ X0\ X1)\wedge(r1\_tarski\ (k10\_xtuple\_0\ (k4\_funct\_4\ X0\ X1\ X2\ X3))\ (k2\_tarski\ X2\ X3))$$