t39_funct_5 (TMSVF7a843D8G7YaW6pQyDwqjGcHiPjavrL)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_funct\_5 : \iota \Rightarrow \iota$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_funct\_4 : \iota \Rightarrow \iota$ be given. Let $k2\_funct\_5 : \iota \Rightarrow \iota$ be given. Let $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((k4\_tarski\ X0\ X1 \in k9\_xtuple\_0\ (k2\_funct\_4\ X2)) \Rightarrow (k1\_binop\_1\ (k2\_funct\_4\ X2)\ X0\ X1 = k1\_binop\_1\ X2\ X1\ X0)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((k4\_tarski\ X0\ X1 \in k9\_xtuple\_0\ X2) \Leftrightarrow (k4\_tarski\ X1\ X0 \in k9\_xtuple\_0\ (k2\_funct\_4\ X2))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow (\forall X3.((v1\_relat\_1\ X3) \wedge (v1\_funct\_1\ X3)) \Rightarrow (((X0 \in k9\_xtuple\_0\ X2) \wedge ((X3 = k1\_funct\_1\ X2\ X0) \wedge (X1 \in k9\_xtuple\_0\ X3))) \Rightarrow ((k4\_tarski\ X0\ X1 \in k9\_xtuple\_0\ (k2\_funct\_5\ X2)) \wedge ((k1\_binop\_1\ (k2\_funct\_5\ X2)\ X0\ X1 = k1\_funct\_1\ X3\ X1) \wedge (k1\_funct\_1\ X3\ X1 \in k10\_xtuple\_0\ (k2\_funct\_5\ X2))))))) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k4\_funct\_5\ X0)) \wedge (v1\_funct\_1\ (k4\_funct\_5\ X0))) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k2\_funct\_5\ X0)) \wedge (v1\_funct\_1\ (k2\_funct\_5\ X0))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.k4\_tarski\ X0\ X1 = k2\_tarski\ (k2\_tarski\ X0\ X1)\ (k1\_tarski\ X0) \tag{6}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(k4\_funct\_5\ X0 = k2\_funct\_4\ (k2\_funct\_5\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.(X1 = k10\_xtuple\_0\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(\exists X3.(X3 \in k9\_xtuple\_0\ X0)\wedge(X2 = k1\_funct\_1\ X0\ X3)))) \tag{8}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.\forall X2.\ k1\_binop\_1\ X0\ X1\ X2 = k1\_funct\_1\ X0\ (k4\_tarski\ X1\ X2)) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski\ X0\ X1 = k2\_tarski\ X1\ X0 \tag{10}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge(v1\_funct\_1\ X3))\Rightarrow(((X0 \in k9\_xtuple\_0\ X2)\wedge((X3 = k1\_funct\_1\ X2\ X0)\wedge(X1 \in k9\_xtuple\_0\ X3)))\Rightarrow((k4\_tarski\ X1\ X0 \in k9\_xtuple\_0\ (k4\_funct\_5\ X2))\wedge((k1\_binop\_1\ (k4\_funct\_5\ X2)\ X1\ X0 = k1\_funct\_1\ X3\ X1)\wedge(k1\_funct\_1\ X3\ X1 \in k10\_xtuple\_0\ (k4\_funct\_5\ X2))))))$$