t68_funct_3 (TMVwDE-JayTR1Xq1chB965UFsKQDPka8LwsU)

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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 $k13\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12\_funct\_3 : \iota \Rightarrow \iota$ be given. Let $k15\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k11\_funct\_3 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.r1\_tarski\ (k10\_xtuple\_0\ (k11\_funct\_3\ X0))\ (k2\_zfmisc\_1\ X0\ X0) \tag{1}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (((k9\_xtuple\_0\ X0 = k9\_xtuple\_0\ X1) \wedge (\forall X2.(X2 \in k9\_xtuple\_0\ X0) \Rightarrow (k1\_funct\_1\ X0\ X2 = k1\_funct\_1\ X1\ X2))) \Rightarrow (X0 = X1))) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0) \Rightarrow (\forall X1.(v1\_relat\_1\ X1) \Rightarrow ((r1\_tarski\ (k10\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1)) \Rightarrow (k9\_xtuple\_0\ (k3\_relat\_1\ X0\ X1) = k9\_xtuple\_0\ X0))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((X0 \in k9\_xtuple\_0\ (k3\_relat\_1\ X2\ X1)) \Rightarrow (k1\_funct\_1\ (k3\_relat\_1\ X2\ X1)\ X0 = k1\_funct\_1\ X1\ (k1\_funct\_1\ X2\ X0)))) \tag{4}$$

Assume the following.

$$\forall X0.k12\_funct\_3\ X0 = k11\_funct\_3\ X0 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X0 = X0 \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\wedge((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1)))\Rightarrow((v1\_relat\_1\ (k3\_relat\_1\ X0\ X1))\wedge(v1\_funct\_1\ (k3\_relat\_1\ X0\ X1))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k3\_relat\_1\ X0\ X1) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\wedge((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1)))\Rightarrow((v1\_relat\_1\ (k15\_funct\_3\ X0\ X1))\wedge(v1\_funct\_1\ (k15\_funct\_3\ X0\ X1))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\wedge((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1)))\Rightarrow((v1\_relat\_1\ (k13\_funct\_3\ X0\ X1))\wedge(v1\_funct\_1\ (k13\_funct\_3\ X0\ X1))) \tag{10}$$

Assume the following.

$$\forall X0.(v1\_funct\_1\ (k12\_funct\_3\ X0))\wedge((v1\_funct\_2\ (k12\_funct\_3\ X0)\ X0\ (k2\_zfmisc\_1\ X0\ X0))\wedge(m1\_subset\_1\ (k12\_funct\_3\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ (k2\_zfmisc\_1\ X0\ X0))))) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k11\_funct\_3\ X0))\wedge(v1\_funct\_1\ (k11\_funct\_3\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((X2 = k15\_funct\_3\ X0\ X1)\Leftrightarrow((k9\_xtuple\_0\ X2 = k2\_zfmisc\_1\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1))\wedge(\forall X3.\forall X4.((X3 \in k9\_xtuple\_0\ X0)\wedge(X4 \in k9\_xtuple\_0\ X1))\Rightarrow(k1\_binop\_1\ X2\ X3\ X4 = k4\_tarski\ (k1\_funct\_1\ X0\ X3)\ (k1\_funct\_1\ X1\ X4))))))) \tag{13}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((X2 = k13\_funct\_3\ X0\ X1)\Leftrightarrow((k9\_xtuple\_0\ X2 = k3\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1))\wedge(\forall X3.(X3 \in k9\_xtuple\_0\ X2)\Rightarrow(k1\_funct\_1\ X2\ X3 = k4\_tarski\ (k1\_funct\_1\ X0\ X3)\ (k1\_funct\_1\ X1\ X3))))))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow((X1 = k11\_funct\_3\ X0)\Leftrightarrow((k9\_xtuple\_0\ X1 = X0)\wedge(\forall X2.(X2 \in X0)\Rightarrow(k1\_funct\_1\ X1\ X2 = k4\_tarski\ X2\ X2)))) \tag{15}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.\forall X2. k1\_binop\_1\ X0\ X1\ X2 = k1\_funct\_1\ X0\ (k4\_tarski\ X1\ X2)) \tag{16}$$

Theorem 1

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2. ((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow(((k9\_xtuple\_0\ X1 = X0)\wedge(k9\_xtuple\_0\ X2 = X0))\Rightarrow(k13\_funct\_3\ X1\ X2 = k3\_relat\_1\ (k12\_funct\_3\ X0)\ (k15\_funct\_3\ X1\ X2))))$$