

t54_funcop_1

(TMKig6UDLDtaxyYu5upziPNyNP9NwkMsKtW)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
 & (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
 & X0) X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
 & X0 X0) X0)))))) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X1 \\
 & X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))))) \Rightarrow (\forall X4. \\
 & (m1_subset_1 X4 X0) \Rightarrow (\forall X5.(m1_subset_1 X5 X1) \Rightarrow (k3_funct_2 \\
 & X1 X0 (k10_funcop_1 X0 X1 X2 X4 X3) X5 = k5_binop_1 X0 X2 X4 (k3_funct_2 \\
 & X1 X0 X3 X5))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2) \wedge \\
 & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
 & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
 & X3) \Leftrightarrow (X2 = X3))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
 & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
 & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\
 & X1 X2 X3 = k1_funct_1 X2 X3)
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\
& X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0)\wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\
& X0))))))\wedge((m1_subset_1 X3 X0)\wedge((v1_funct_1 X4)\wedge((v1_funct_2 \\
& X4 X1 X0)\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))))\Rightarrow \\
& ((v1_funct_1 (k10_funcop_1 X0 X1 X2 X3 X4)\wedge((v1_funct_2 (k10_funcop_1 \\
& X0 X1 X2 X3 X4) X1 X0)\wedge(m1_subset_1 (k10_funcop_1 X0 X1 X2 X3 X4) (k1_zfmisc_1 \\
& (k2_zfmisc_1 X1 X0))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((v1_funct_1 X2)\wedge((v1_funct_2 \\
& X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))\Rightarrow \\
& (\forall X3.((v1_funct_1 X3)\wedge((v1_funct_2 X3 X0 X1)\wedge(m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\Rightarrow((r2_funct_2 X0 X1 X2 X3)\Leftrightarrow \\
& (\forall X4.(m1_subset_1 X4 X0)\Rightarrow(k1_funct_1 X2 X4 = k1_funct_1 \\
& X3 X4))))
\end{aligned} \tag{5}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(\neg v1_xboole_0 X1)\Rightarrow \\
& (\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 (k2_zfmisc_1 X0 \\
& X0) X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\
& X0 X0) X0))))\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge((v1_funct_2 X3 X1 \\
& X0)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0))))\Rightarrow(\forall X4. \\
& ((v1_funct_1 X4)\wedge((v1_funct_2 X4 X1 X0)\wedge(m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X1 X0))))\Rightarrow(\forall X5.(m1_subset_1 X5 X0)\Rightarrow((\forall X6. \\
& (m1_subset_1 X6 X1)\Rightarrow(k3_funct_2 X1 X0 X3 X6 = k5_binop_1 X0 X2 X5 (\\
& k3_funct_2 X1 X0 X4 X6))\Rightarrow(r2_funct_2 X1 X0 X3 (k10_funcop_1 X0 X1 \\
& X2 X5 X4))))))))))
\end{aligned}$$