

t4_multop_1
(TMSFz5LBoogiWtNMUWNXp1F2VVyZfD7vcoJ)

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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 $k4_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \neg (X0 \in \\ & \quad k4_zfmisc_1 X1 X2 X3 X4) \wedge (\forall X5. \forall X6. \forall X7. \forall X8. \\ & \neg (X5 \in X1) \wedge ((X6 \in X2) \wedge ((X7 \in X3) \wedge ((X8 \in X4) \wedge (X0 = k6_xtuple_0 X5 X6 \\ & \quad X7 X8)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow \\ & (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((\forall X4. (X4 \in X0) \Rightarrow \\ & (k1_funct_1 X2 X4 = k1_funct_1 X3 X4)) \Rightarrow (r2_relset_1 X0 X1 X2 X3))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \Rightarrow ((r2_relset_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.k6_xtuple_0 X0 X1 X2 X3 = k4_tarski (k3_xtuple_0 X0 X1 X2) X3 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k3_xtuple_0 X0 X1 X2 = k4_tarski (k4_tarski X0 X1) X2 \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.\forall X2.\forall X3. \\ & \quad \forall X4.\forall X5.((v1_funct_1 X5) \wedge ((v1_funct_2 X5 (k4_zfmisc_1 \\ & \quad X1 X2 X3 X4) X0) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 (k4_zfmisc_1 \\ & \quad X1 X2 X3 X4) X0)))))) \Rightarrow (\forall X6.((v1_funct_1 X6) \wedge ((v1_funct_2 \\ & \quad X6 (k4_zfmisc_1 X1 X2 X3 X4) X0) \wedge (m1_subset_1 X6 (k1_zfmisc_1 (k2_zfmisc_1 \\ & \quad (k4_zfmisc_1 X1 X2 X3 X4) X0)))))) \Rightarrow ((\forall X7.\forall X8.\forall X9. \\ & \quad \forall X10.((X7 \in X1) \wedge ((X8 \in X2) \wedge ((X9 \in X3) \wedge (X10 \in X4)))) \Rightarrow (k1_funct_1 \\ & \quad X5 (k6_xtuple_0 X7 X8 X9 X10) = k1_funct_1 X6 (k6_xtuple_0 X7 X8 X9 \\ & \quad X10))) \Rightarrow (r2_funct_2 (k4_zfmisc_1 X1 X2 X3 X4) X0 X5 X6)))) \end{aligned}$$