

l27_collsp (TMbiSkfnWn3ndyDgpERx3SiaNoMsyHEkqqf)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $c9_collsp : \iota$ be given. Let $k4_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $c8_collsp : \iota$ be given. Let $c7_collsp : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k3_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $np_3 : \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $np_2 : \iota$ be given. Let $np_1 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $m1_collsp : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g1_collsp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k8_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_collsp : \iota \Rightarrow o$ be given. Let $l1_collsp : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $u1_collsp : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. (k3_xtuple_0 X0 X1 X2 = k3_xtuple_0 X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$((v2_xxreal_0 np_3) \wedge (m2_subset_1 np_3 k1_numbers k5_numbers)) \wedge ((m1_subset_1 np_3 k5_numbers) \wedge (m1_subset_1 np_3 k1_numbers)) \quad (4)$$

Assume the following.

$$((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \text{ np_1}) \wedge (m2_subset_1 \text{ np_1 } k1_numbers \text{ k5_numbers})) \wedge \\ & ((m1_subset_1 \text{ np_1 } k5_numbers) \wedge (m1_subset_1 \text{ np_1 } k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & ((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1) \wedge (\neg v1_xboole_0 X2) \wedge \\ & (m1_subset_1 X3 X0) \wedge ((m1_subset_1 X4 X1) \wedge (m1_subset_1 X5 X2)))) \Rightarrow \\ & (k4_domain_1 X0 X1 X2 X3 X4 X5 = k3_xtuple_0 X3 X4 X5) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_collsp X1 X0) \Rightarrow (\forall X2. \forall X3. \\ & (g1_collsp X0 X1 = g1_collsp X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \end{aligned} \quad (9)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & ((m1_subset_1 X1 X0) \wedge ((m1_subset_1 X2 X0) \wedge (m1_subset_1 X3 X0)))) \Rightarrow \\ & (m1_subset_1 (k8_domain_1 X0 X1 X2 X3) (k1_zfmisc_1 X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_collsp X1 X0) \Rightarrow ((v1_collsp (g1_collsp \\ & X0 X1)) \wedge (l1_collsp (g1_collsp X0 X1))) \end{aligned} \quad (12)$$

Assume the following.

$$(\neg v2_struct_0 c9_collsp) \wedge (l1_collsp c9_collsp) \quad (13)$$

Assume the following.

$$m1_collsp c8_collsp c7_collsp \quad (14)$$

Assume the following.

$$\neg v1_xboole_0 c7_collsp \quad (15)$$

Assume the following.

$$c9_collsp = g1_collsp c7_collsp c8_collsp \quad (16)$$

Assume the following.

$$\begin{aligned}
c8_collsp = & \text{ReplSep3 } (to\text{set } (\lambda X0 : \iota.m1_subset_1 X0 k5_numbers)) \\
& (\lambda X0 : \iota.to\text{set } (\lambda X1 : \iota.m1_subset_1 X1 k5_numbers)) (\\
& \lambda X0 : \iota.\lambda X1 : \iota.to\text{set } (\lambda X2 : \iota.m1_subset_1 X2 k5_numbers)) \\
& (\lambda X0 : \iota.\lambda X1 : \iota.\lambda X2 : \iota.(\neg(X0 \neq X1) \wedge ((X1 \neq X2) \wedge (X2 \neq \\
& X0))) \wedge ((X0 \in k8_domain_1 k5_numbers np_1 np_2 np_3) \wedge ((X1 \in k8_domain_1 \\
& k5_numbers np_1 np_2 np_3) \wedge (X2 \in k8_domain_1 k5_numbers np_1 \\
& np_2 np_3)))) (\lambda X0 : \iota.\lambda X1 : \iota.\lambda X2 : \iota.k4_domain_1 \\
& k5_numbers k5_numbers k5_numbers X0 X1 X2)
\end{aligned} \tag{17}$$

Assume the following.

$$c7_collsp = k8_domain_1 k5_numbers np_1 np_2 np_3 \tag{18}$$

Assume the following.

$$\forall X0.(l1_collsp X0) \Rightarrow ((v1_collsp X0) \Rightarrow (X0 = g1_collsp (u1_struct_0 X0) (u1_collsp X0))) \tag{19}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 (u1_struct_0 c9_collsp)) \Rightarrow (\forall X1. \\
& (m1_subset_1 X1 (u1_struct_0 c9_collsp)) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 (u1_struct_0 c9_collsp)) \Rightarrow ((k4_domain_1 (u1_struct_0 c9_collsp) \\
& (u1_struct_0 c9_collsp) (u1_struct_0 c9_collsp) X0 X1 X2 \in c8_collsp) \Leftrightarrow \\
& ((\neg(X0 \neq X1) \wedge ((X1 \neq X2) \wedge (X2 \neq X0))) \wedge ((X0 \in c7_collsp) \wedge ((X1 \in c7_collsp) \wedge \\
& (X2 \in c7_collsp))))))
\end{aligned}$$