

t69_interval1

(TMchkpyX61YcjqrX5FjvnKTuCzepqBtrm4f)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_roughs_1 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $m2_interval : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_interval : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k16_interval : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k22_interval : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k15_interval : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k14_interval : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 X0) \wedge (l1_orders_2 \\ & \quad X0))) \Rightarrow (\forall X1.(m2_interval X1 X0) \Rightarrow (\forall X2.(m2_interval \\ & \quad X2 X0) \Rightarrow (r2_interval X0 (k16_interval X0 X1 X2) (k16_interval X0 \\ & \quad \quad X2 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 X0) \wedge (l1_orders_2 \\ & \quad X0))) \Rightarrow (\forall X1.(m2_interval X1 X0) \Rightarrow (\exists X2.(m1_subset_1 \\ & \quad X2 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge (\exists X3.(m1_subset_1 \\ & \quad X3 (k1_zfmisc_1 (u1_struct_0 X0))) \wedge (X1 = k4_tarski X2 X3)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.k2_xboole_0 X0 k1_xboole_0 = X0 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 \\ & \quad X0) \wedge (l1_orders_2 X0))) \wedge ((m2_interval X1 X0) \wedge (m2_interval X2 \\ & \quad X0))) \Rightarrow (r2_interval X0 X1 X1) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 \\ & \quad X0) \wedge (l1_orders_2 X0))) \wedge ((m2_interval X1 X0) \wedge (m2_interval X2 \\ & \quad X0))) \Rightarrow ((r2_interval X0 X1 X2) \Leftrightarrow (X1 = X2)) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.k9_setfam_1 X0 = k1_zfmisc_1 X0 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 \\ X0))\wedge(m1_subset_1 X2 (k1_zfmisc_1 X0)))\Rightarrow(k4_subset_1 X0 X1 X2 = \\ k2_xboole_0 X1 X2) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k2_xtuple_0 (k4_tarski X0 X1) = X1 \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k1_xtuple_0 (k4_tarski X0 X1) = X0 \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v3_roughs_1 X0)\wedge(l1_orders_2 \\ X0)))\Rightarrow(m2_interval (k22_interval X0) X0) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v3_roughs_1 \\ X0)\wedge(l1_orders_2 X0)))\wedge((m2_interval X1 X0)\wedge(m2_interval X2 \\ X0)))\Rightarrow(m2_interval (k16_interval X0 X1 X2) X0) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v3_roughs_1 X0)\wedge \\ (l1_orders_2 X0)))\wedge(m2_interval X1 X0))\Rightarrow(m1_subset_1 (k15_interval \\ X0 X1) (k1_zfmisc_1 (u1_struct_0 X0))) \end{aligned} \quad (12)$$

Assume the following.

$$k1_xboole_0 = the (\lambda X0 : \iota.v1_xboole_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v3_roughs_1 X0)\wedge(l1_orders_2 \\ X0)))\Rightarrow(k22_interval X0 = k4_tarski k1_xboole_0 k1_xboole_0) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v3_roughs_1 X0)\wedge(l1_orders_2 \\ X0)))\Rightarrow(\forall X1.(m2_interval X1 X0)\Rightarrow(\forall X2.(m2_interval \\ X2 X0)\Rightarrow(k16_interval X0 X1 X2 = k4_tarski (k4_subset_1 (u1_struct_0 \\ X0) (k14_interval X0 X1) (k14_interval X0 X2)) (k4_subset_1 (u1_struct_0 \\ X0) (k15_interval X0 X1) (k15_interval X0 X2)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 X0) \wedge (l1_orders_2 X0))) \Rightarrow (\forall X1.(m2_interval1 X1 X0) \Rightarrow (k15_interval1 X0 X1 = k2_xtuple_0 X1)) \quad (16)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 X0) \wedge (l1_orders_2 X0))) \Rightarrow (\forall X1.(m2_interval1 X1 X0) \Rightarrow (k14_interval1 X0 X1 = k1_xtuple_0 X1)) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (18)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v3_roughs_1 X0) \wedge (l1_orders_2 X0))) \Rightarrow (\forall X1.(m2_interval1 X1 X0) \Rightarrow (r2_interval1 X0 (k16_interval1 X0 (k22_interval1 X0) X1) X1))$$