

t29_heyting3 (TMSTNNDFRc- CxxRbu28FVCVNFpXbfLHFJmyw)

October 27, 2020

Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_heyting3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_substlat : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $k5_substlat : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ be given. Let $v4_finsub_1 : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_lattice3 : \iota \Rightarrow \iota$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $v4_relat_2 : \iota \Rightarrow o$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $k3_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $k4_substlat : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lattice3 : \iota \Rightarrow \iota$ be given. Let $u1_orders_2 : \iota \Rightarrow \iota$ 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.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

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.

$$\forall X0.\forall X1.\forall X2.\forall X3.((X3 \in k1_substlat\ X0\ X1) \wedge (X2 \in X3)) \Rightarrow ((v1_relat_1\ X2) \wedge ((v1_funct_1\ X2) \wedge (v1_finset_1\ X2))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.r1_tarski\ (k4_partfun1\ X0\ X1)\ (k9_setfam_1\ (k2_zfmisc_1\ X0\ X1)) \quad (5)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0\ X0) \wedge (m1_subset_1\ X1\ X0)) \Rightarrow (k6_domain_1\ X0\ X1 = k1_tarski\ X1) \quad (7)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1\ X2\ (k1_substlat\ X0\ X1)) \wedge (m1_subset_1\ X3\ (k1_substlat\ X0\ X1))) \Rightarrow (k2_substlat\ X0\ X1\ X2\ X2 = X2) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X0))) \Rightarrow (\forall X2.\forall X3.(g1_orders_2\ X0\ X1 = g1_orders_2\ X2\ X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (10)$$

Assume the following.

$$(\neg v1_xboole_0\ k4_ordinal1) \wedge (v3_ordinal1\ k4_ordinal1) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(v3_lattices\ (k5_substlat\ X0\ X1)) \wedge (v10_lattices\ (k5_substlat\ X0\ X1)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v2_struct_0\ (k5_substlat\ X0\ X1)) \wedge (v3_lattices\ (k5_substlat\ X0\ X1)) \quad (13)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 (k5_finsub_1 X0)) \wedge (v4_finsub_1 (k5_finsub_1 X0)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\neg v1_xboole_0 (k1_substlat X0 X1) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\neg v1_xboole_0 (k4_partfun1 X0 X1) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(v3_lattices (k5_substlat X0 X1)) \wedge (l3_lattices (k5_substlat X0 X1)) \quad (17)$$

Assume the following.

$$\forall X0.v4_finsub_1 (k5_finsub_1 X0) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X2 (k1_substlat X0 X1)) \wedge (m1_subset_1 X3 (k1_substlat X0 X1))) \Rightarrow (m1_subset_1 (k2_substlat X0 X1 X2 X3) (k5_finsub_1 (k4_partfun1 X0 X1))) \quad (19)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow ((v1_partfun1 (k2_lattice3 X0) (u1_struct_0 X0)) \wedge ((v1_relat_2 (k2_lattice3 X0)) \wedge ((v4_relat_2 (k2_lattice3 X0)) \wedge ((v8_relat_2 (k2_lattice3 X0)) \wedge (m1_subset_1 (k2_lattice3 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0))) \Rightarrow ((v1_orders_2 (g1_orders_2 X0 X1)) \wedge (l1_orders_2 (g1_orders_2 X0 X1))) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(v4_finsub_1 X1) \Rightarrow ((X1 = k5_finsub_1 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow ((r1_tarski X2 X0) \wedge (v1_finset_1 X2)))) \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3_lattices\ X2)\wedge(l3_lattices \\ & X2))\Rightarrow((X2 = k5_substlat\ X0\ X1)\Leftrightarrow((u1_struct_0\ X2 = k1_substlat\ X0 \\ & X1)\wedge(\forall X3.(m2_subset_1\ X3\ (k5_finsub_1\ (k4_partfun1\ X0 \\ & X1))\ (k1_substlat\ X0\ X1))\Rightarrow(\forall X4.(m2_subset_1\ X4\ (k5_finsub_1 \\ & (k4_partfun1\ X0\ X1))\ (k1_substlat\ X0\ X1))\Rightarrow((k1_binop_1\ (u2_lattices \\ & X2)\ X3\ X4 = k3_substlat\ X0\ X1\ (k2_substlat\ X0\ X1\ X3\ X4))\wedge(k1_binop_1 \\ & (u1_lattices\ X2)\ X3\ X4 = k3_substlat\ X0\ X1\ (k4_substlat\ X0\ X1\ X3\ X4))))))))) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0)\wedge((v10_lattices\ X0)\wedge(l3_lattices \\ & X0)))\Rightarrow(k3_lattice3\ X0 = g1_orders_2\ (u1_struct_0\ X0)\ (k2_lattice3 \\ & X0)) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.k1_heyting3\ X0\ X1 = k3_lattice3\ (k5_substlat \\ & X0\ X1) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_orders_2\ X0)\Rightarrow((v1_orders_2\ X0)\Rightarrow(X0 = g1_orders_2 \\ & (u1_struct_0\ X0)\ (u1_orders_2\ X0))) \end{aligned} \quad (26)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1\ X0\ k5_numbers)\Rightarrow(\forall X1.\forall X2. \\ & \forall X3.(m1_subset_1\ X3\ (u1_struct_0\ (k1_heyting3\ X1\ (k6_domain_1 \\ & k5_numbers\ X0))))\Rightarrow((X2 \in X3)\Rightarrow((v1_finset_1\ X2)\wedge(m1_subset_1 \\ & X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X1\ (k6_domain_1\ k5_numbers\ X0))))))))) \end{aligned}$$