

t30_rat_1 (TMMRpohSJYY-
Pow5GHCw2j8qpJm5Ve7KVuUB)

October 27, 2020

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 $v1_int_1 : \iota \Rightarrow o$ be given. Let $v1_rat_1 : \iota \Rightarrow o$ be given. Let $k6_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k4_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_rat_1 : \iota \Rightarrow \iota$ be given. Let $k2_rat_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k7_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_0 : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k7_xcmplx_0 X0 np_1 = X0) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(r1_xxreal_0 X0 X1) \wedge ((\neg v2_xxreal_0 X1) \wedge (v2_xxreal_0 X0)))) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k3_xcmplx_0 np_1 X0 = X0) \quad (4)$$

Assume the following.

$$\begin{aligned} &\forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ &(v1_int_1 X1) \Rightarrow (\forall X2.(v1_rat_1 X2) \Rightarrow (\neg(X0 \neq k6_numbers) \wedge \\ &((X2 = k6_real_1 X1 X0) \wedge (\forall X3.(m2_subset_1 X3 k1_numbers \\ &k5_numbers) \Rightarrow (\neg(X1 = k4_real_1 (k2_rat_1 X2) X3) \wedge (X0 = k4_nat_1 \\ &(k1_rat_1 X2) X3)))))))) \quad (5) \end{aligned}$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X0)) \Rightarrow (X0 = X1)) \quad (6)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 \text{ k6_numbers} = X0) \quad (7)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow ((\neg r1_xxreal_0 (k1_nat_1 X1 \text{ np_1}) X0) \Leftrightarrow (r1_xxreal_0 X0 X1))) \quad (8)$$

Assume the following.

$$((v2_xxreal_0 \text{ np_1}) \wedge (m2_subset_1 \text{ np_1 } k1_numbers \text{ k5_numbers})) \wedge ((m1_subset_1 \text{ np_1 } k5_numbers) \wedge (m1_subset_1 \text{ np_1 } k1_numbers)) \quad (9)$$

Assume the following.

$$v1_xboole_0 \text{ np_0} \quad (10)$$

Assume the following.

$$k4_xcmplx_0 (k4_xcmplx_0 \text{ np_1}) = \text{np_1} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 X1)) \Rightarrow (k8_real_1 X0 X1 = k3_xcmplx_0 X0 X1) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (m1_subset_1 X1 k1_numbers)) \Rightarrow (k6_real_1 X0 X1 = k7_xcmplx_0 X0 X1) \quad (14)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (15)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(m1_subset_1 X1 k1_numbers))\Rightarrow (k4_real_1 X0 X1 = k3_xcmplx_0 X0 X1) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(v7_ordinal1 X1))\Rightarrow(k4_nat_1 X0 X1 = k3_xcmplx_0 X0 X1) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 X0)\wedge(m1_subset_1 X1 k5_numbers))\Rightarrow (k1_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (19)$$

Assume the following.

$$\exists X0.(v1_xboole_0 X0)\wedge((v1_xcmplx_0 X0)\wedge((v1_xxreal_0 X0)\wedge(v1_xreal_0 X0))) \quad (20)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (21)$$

Assume the following.

$$\forall X0.(v1_int_1 X0)\Rightarrow((v1_xcmplx_0 (k4_xcmplx_0 X0))\wedge(v1_int_1 (k4_xcmplx_0 X0))) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.((v7_ordinal1 X0)\wedge(v7_ordinal1 X1))\Rightarrow(v7_ordinal1 (k3_xcmplx_0 X0 X1)) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_xxreal_0 X0)\wedge(v1_xreal_0 X0))\wedge((\neg v3_xxreal_0 X1)\wedge(v1_xreal_0 X1)))\Rightarrow(\neg v2_xxreal_0 (k3_xcmplx_0 X0 X1)) \quad (24)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Rightarrow(m1_subset_1 X2 X0)) \quad (26)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (27)$$

Assume the following.

$$\forall X0.(v1_rat_1 X0) \Rightarrow (v1_int_1 (k2_rat_1 X0)) \quad (28)$$

Assume the following.

$$\forall X0.(v1_rat_1 X0) \Rightarrow (m2_subset_1 (k1_rat_1 X0) k1_numbers \quad k5_numbers) \quad (29)$$

Assume the following.

$$\forall X0.(v1_rat_1 X0) \Rightarrow (k2_rat_1 X0 = k8_real_1 (k1_rat_1 X0) X0) \quad (30)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 X1)) \Rightarrow (k4_nat_1 X0 X1 = k4_nat_1 X1 X0) \quad (31)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (k3_xcmplx_0 X0 X1 = k3_xcmplx_0 X1 X0) \quad (32)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (k2_xcmplx_0 X0 X1 = k2_xcmplx_0 X1 X0) \quad (33)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (34)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (v7_ordinal1 X0) \quad (35)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \Rightarrow ((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \quad (36)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (37)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \quad (38)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (39)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow((v7_ordinal1\ X0)\wedge(\neg v3_xreal_0\ X0)) \quad (40)$$

Assume the following.

$$\forall X0.(v1_int_1\ X0)\Rightarrow(v1_xreal_0\ X0) \quad (41)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v1_xreal_0\ X0) \quad (42)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v1_xreal_0\ X0) \quad (43)$$

Assume the following.

$$\forall X0.(v1_int_1\ X0)\Rightarrow(v1_rat_1\ X0) \quad (44)$$

Assume the following.

$$\forall X0.(v7_ordinal1\ X0)\Rightarrow(v1_int_1\ X0) \quad (45)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_numbers)\Rightarrow(v1_xreal_0\ X0) \quad (46)$$

Assume the following.

$$\forall X0.(v1_rat_1\ X0)\Rightarrow(v1_xreal_0\ X0) \quad (47)$$

Theorem 1

$$\begin{aligned} &\forall X0.(m2_subset_1\ X0\ k1_numbers\ k5_numbers)\Rightarrow(\forall X1. \\ &\quad (v1_int_1\ X1)\Rightarrow(\forall X2.(v1_rat_1\ X2)\Rightarrow(((X2 = k6_real_1\ X1\ X0)\wedge \\ &\quad (\forall X3.(m2_subset_1\ X3\ k1_numbers\ k5_numbers)\Rightarrow(\neg(\neg r1_xreal_0 \\ &\quad \quad X3\ np_1)\wedge(\exists X4.(v1_int_1\ X4)\wedge(\exists X5.(m2_subset_1 \\ &\quad \quad X5\ k1_numbers\ k5_numbers)\wedge((X1 = k4_real_1\ X4\ X3)\wedge(X0 = k4_nat_1 \\ &\quad \quad X5\ X3))))))\Rightarrow((X0 = k6_numbers)\vee((X0 = k1_rat_1\ X2)\wedge(X1 = k2_rat_1 \\ &\quad \quad X2)))))) \end{aligned}$$