

l17_rinfsup2 (TMR-
wysF1kDW28iVKnasbzQnznAU3v7ujFVR)

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Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k7_numbers : \iota$ 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 $v7_valued_0 : \iota \Rightarrow o$ be given. Let $k3_rinfsup2 : \iota \Rightarrow \iota$ be given. Let $v5_valued_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k12_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_valued_0 : \iota \Rightarrow o$ be given. Let $v8_valued_0 : \iota \Rightarrow o$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xxreal_2 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k7_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the

following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (((v5_valued_0 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow \\
& (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 \\
& X1 X2) \wedge (r1_xxreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \wedge \\
& (((\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
& (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X1 X2) \wedge \\
& (r1_xxreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \Rightarrow (v5_valued_0 \\
& X0)) \wedge (((v6_valued_0 X0) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers \\
& k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\
& (\neg(\neg r1_xxreal_0 X1 X2) \wedge (r1_xxreal_0 (k12_supinf_2 X0 X2) (k12_supinf_2 \\
& X0 X1)))))) \wedge (((\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow \\
& (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 \\
& X1 X2) \wedge (r1_xxreal_0 (k12_supinf_2 X0 X2) (k12_supinf_2 X0 X1)))))) \Rightarrow \\
& (v6_valued_0 X0)) \wedge (((v7_valued_0 X0) \Rightarrow (\forall X1.(m2_subset_1 \\
& X1 k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
& k5_numbers) \Rightarrow ((r1_xxreal_0 X2 X1) \Rightarrow (r1_xxreal_0 (k12_supinf_2 \\
& X0 X2) (k12_supinf_2 X0 X1)))))) \wedge (((\forall X1.(m2_subset_1 X1 \\
& k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers \\
& k5_numbers) \Rightarrow ((r1_xxreal_0 X2 X1) \Rightarrow (r1_xxreal_0 (k12_supinf_2 \\
& X0 X2) (k12_supinf_2 X0 X1)))))) \Rightarrow (v7_valued_0 X0)) \wedge (((v8_valued_0 \\
& X0) \Rightarrow (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
& (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow ((r1_xxreal_0 X2 X1) \Rightarrow \\
& (r1_xxreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \wedge (\\
& (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\
& (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow ((r1_xxreal_0 X2 X1) \Rightarrow \\
& (r1_xxreal_0 (k12_supinf_2 X0 X1) (k12_supinf_2 X0 X2)))))) \Rightarrow (v8_valued_0 \\
& X0))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (\forall X1.(v2_membered X1) \Rightarrow ((r1_tarski X0 X1) \Rightarrow (r1_xxreal_0 (k2_xxreal_2 X1) (k2_xxreal_2 X0)))) \tag{2}$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2.(v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow (r1_xxreal_0 X0 X2)))) \tag{3}$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (k7_supinf_2 X0 = k2_xxreal_2 X0) \tag{4}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{5}$$

Assume the following.

$$(\neg v1_xboole_0\ k4_ordinal1) \wedge (v3_ordinal1\ k4_ordinal1) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge \\ (m1_subset_1\ X1\ (k1_zfmisc_1\ X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ X2\ X0\ X1) \Rightarrow (m1_subset_1\ X2\ X0)) \end{aligned} \quad (7)$$

Assume the following.

$$m1_subset_1\ k5_numbers\ (k1_zfmisc_1\ k1_numbers) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1_funct_1\ X0) \wedge ((v1_funct_2\ X0\ k5_numbers\ k7_numbers) \wedge \\ (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers)))))) \Rightarrow \\ ((v1_funct_1\ (k3_rinfsup2\ X0)) \wedge ((v1_funct_2\ (k3_rinfsup2\ X0) \\ k5_numbers\ k7_numbers) \wedge (m1_subset_1\ (k3_rinfsup2\ X0)\ (k1_zfmisc_1 \\ (k2_zfmisc_1\ k5_numbers\ k7_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1_funct_1\ X0) \wedge ((v1_funct_2\ X0\ k5_numbers\ k7_numbers) \wedge \\ (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers)))))) \Rightarrow \\ (\forall X1. ((v1_funct_1\ X1) \wedge ((v1_funct_2\ X1\ k5_numbers\ k7_numbers) \wedge \\ (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k7_numbers)))))) \Rightarrow \\ ((X1 = k3_rinfsup2\ X0) \Leftrightarrow (\forall X2. (m2_subset_1\ X2\ k1_numbers \\ k5_numbers) \Rightarrow (\exists X3. ((\neg v1_xboole_0\ X3) \wedge (m1_subset_1\ X3 \\ (k1_zfmisc_1\ k7_numbers)))) \wedge ((X3 = ReplSep\ (toset\ (\lambda X4 : \iota. \\ m2_subset_1\ X4\ k1_numbers\ k5_numbers))\ (\lambda X4 : \iota. r1_xreal_0 \\ X2\ X4)\ (\lambda X4 : \iota. k12_supinf_2\ X0\ X4)) \wedge (k12_supinf_2\ X1\ X2 = k7_supinf_2 \\ X3)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski\ X0\ X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (11)$$

Assume the following.

$$\forall X0. (m1_subset_1\ X0\ (k1_zfmisc_1\ k7_numbers)) \Rightarrow (v2_membered\ X0) \quad (12)$$

Assume the following.

$$\forall X0. (v1_xreal_0\ X0) \Rightarrow (v1_xxreal_0\ X0) \quad (13)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_xboole_0 X1)) \quad (15)$$

Theorem 1

$$\forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 k5_numbers k7_numbers)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers))))))\Rightarrow(v7_valued_0 (k3_rinf sup2 X0))$$