

l44_rinfsup2 (TMM- TUk8fe2RcbBYG7EvU98FQtkktYLbUk9EE)

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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 $v3_rinfsup2 : \iota \Rightarrow o$ be given. Let $v7_valued_0 : \iota \Rightarrow o$ be given. Let $v7_mesfunc5 : \iota \Rightarrow o$ be given. Let $v10_mesfunc5 : \iota \Rightarrow o$ be given. Let $k2_mesfunc5 : \iota \Rightarrow \iota$ be given. Let $k1_rinfsup2 : \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v2_comseq_2 : \iota \Rightarrow o$ be given. Let $k2_seq_2 : \iota \Rightarrow \iota$ be given. Let $k5_rinfsup1 : \iota \Rightarrow \iota$ be given. Let $k6_rinfsup1 : \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_rinfsup1 : \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_rinfsup2 : \iota \Rightarrow o$ be given. Let $v1_seq_2 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $k8_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k1_xxreal_2 : \iota \Rightarrow \iota$ be given. Let $k4_seq_4 : \iota \Rightarrow \iota$ be given. Let $k2_seq_4 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k17_supinf_2 : \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v4_xxreal_2 : \iota \Rightarrow o$ be given. Let $v4_card_3 : \iota \Rightarrow o$ be given. Let $k1_rinfsup1 : \iota \Rightarrow \iota$ be given. Let $v1_rinfsup2 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & ((v2_comseq_2 X0) \Rightarrow ((k2_seq_2 X0 = k5_rinfsup1 X0) \wedge (k2_seq_2 X0 = \\ & k6_rinfsup1 X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & ((v7_valued_0 X0) \Rightarrow (r2_funct_2 k5_numbers k1_numbers (k3_rinfsup1 \\ & X0) X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& (((r1_funct_2 k5_numbers k7_numbers k5_numbers k1_numbers X0 \\
& X1) \wedge (v2_comseq_2 X1)) \Rightarrow ((v7_mesfunc5 X0) \wedge ((v10_mesfunc5 X0) \wedge \\
& (k2_mesfunc5 X0 = k2_seq_2 X1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& ((r1_funct_2 k5_numbers k7_numbers k5_numbers k1_numbers X0 X1) \Rightarrow \\
& ((v2_rinf sup2 X0) \Leftrightarrow (v1_seq_2 X1))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& ((v3_rinf sup2 X0) \Rightarrow ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers \\
& k1_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\
& k1_numbers))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
& X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& ((\neg v1_xboole_0 X1) \wedge (\neg v1_xboole_0 X3) \wedge (((v1_funct_1 X4) \wedge ((\\
& v1_funct_2 X4 X0 X1) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))))) \wedge ((v1_funct_1 X5) \wedge ((v1_funct_2 X5 X2 X3) \wedge (m1_subset_1 \\
& X5 (k1_zfmisc_1 (k2_zfmisc_1 X2 X3)))))) \Rightarrow ((r1_funct_2 X0 X1 \\
& X2 X3 X4 X5) \Leftrightarrow (X4 = X5))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0. (v2_membered X0) \Rightarrow (k8_supinf_2 X0 = k1_xreal_2 X0) \tag{8}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers)) \Rightarrow (k4_seq_4 X0 = k2_seq_4 X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (k2_relset_1 X0 X1 = k10_xtuple_0 X1) \quad (10)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow (k17_supinf_2 X0 = k10_xtuple_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v1_xboole_0 X0) \wedge ((v3_membered X0) \wedge (v4_xxreal_2 X0))) \Rightarrow (k2_seq_4 X0 = k1_xxreal_2 X0) \quad (12)$$

Assume the following.

$$\neg v1_xboole_0 k7_numbers \quad (13)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (14)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((v1_funct_1 (k3_rinfsup1 X0) \wedge (v1_funct_2 (k3_rinfsup1 X0) k5_numbers k1_numbers) \wedge (m1_subset_1 (k3_rinfsup1 X0) (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v5_relat_1 X1 X0)) \Rightarrow (m1_subset_1 (k2_relset_1 X0 X1) (k1_zfmisc_1 X0)) \quad (16)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow ((\neg v1_xboole_0 (k17_supinf_2 X0)) \wedge ((v4_card_3 (k17_supinf_2 X0)) \wedge (m1_subset_1 (k17_supinf_2 X0) (k1_zfmisc_1 k7_numbers)))) \quad (17)$$

Assume the following.

$$\forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow (k6_rinfsup1 X0 = k1_rinfsup1 (k3_rinfsup1 X0)) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ & ((v3_rinf sup2 X0) \Leftrightarrow ((v2_rinf sup2 X0) \wedge (v1_rinf sup2 X0))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ & ((v2_rinf sup2 X0) \Leftrightarrow (v4_xxreal_2 (k17_supinf_2 X0))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ & (k1_rinf sup2 X0 = k8_supinf_2 (k17_supinf_2 X0)) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ & (k1_rinf sup1 X0 = k4_seq_4 (k2_relset_1 k1_numbers X0)) \end{aligned} \quad (22)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k1_numbers)) \Rightarrow (v3_membered X0) \quad (23)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (k1_zfmisc_1 k7_numbers)) \Rightarrow (v2_membered X0) \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers \\ & k1_numbers))) \Rightarrow (((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers \\ & k1_numbers) \wedge ((v7_valued_0 X0) \wedge (v1_seq_2 X0)))) \Rightarrow ((v1_funct_1 \\ & X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge (v2_comseq_2 X0)))) \end{aligned} \quad (25)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (26)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (27)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ & (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ & (((v3_rinf sup2 X0) \wedge (v7_valued_0 X0)) \Rightarrow ((v7_mesfunc5 X0) \wedge ((v10_mesfunc5 \\ & X0) \wedge (k2_mesfunc5 X0 = k1_rinf sup2 X0)))) \end{aligned}$$