

t40_supinf_2 (TMXUDsUc- QTCe12LFFTpFyT6bQgATStBFV2m)

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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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v6_supinf_2 : \iota \Rightarrow o$ 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 $k18_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_supinf_2 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v4_card_3 : \iota \Rightarrow o$ be given. Let $v5_supinf_2 : \iota \Rightarrow o$ be given. Let $m1_supinf_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_supinf_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k17_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v4_card_3 X0) \wedge ((v5_supinf_2 \\ & X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 k7_numbers)))))) \Rightarrow (\forall X1. \\ (m1_supinf_2 X1 X0) \Rightarrow (\forall X2.(m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow \\ ((r1_xxreal_0 (k12_supinf_2 (k15_supinf_2 X0 X1) X2) (k12_supinf_2 \\ (k15_supinf_2 X0 X1) (k2_nat_1 X2 np_1))) \wedge (r1_xxreal_0 k1_supinf_2 \\ (k12_supinf_2 (k15_supinf_2 X0 X1) X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\ & ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\ X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{2}$$

Assume the following.

$$k1_supinf_2 = k1_xboole_0 \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ (k17_supinf_2 X0 = k10_xtuple_0 X0) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0) \wedge ((v4_card_3 X0) \wedge (m1_subset_1 \\ X0 (k1_zfmisc_1 k7_numbers)))) \Rightarrow (\exists X1.m1_supinf_2 X1 X0) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 X0) \wedge ((v4_card_3 X0) \wedge (m1_subset_1 \\ X0 (k1_zfmisc_1 k7_numbers)))) \Rightarrow (\forall X1.(m1_supinf_2 X1 X0) \Rightarrow \\ ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k7_numbers) \wedge (m1_subset_1 \\ X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ ((v1_funct_1 (k18_supinf_2 X0)) \wedge ((v1_funct_2 (k18_supinf_2 \\ X0) k5_numbers k7_numbers) \wedge (m1_subset_1 (k18_supinf_2 X0) (k1_zfmisc_1 \\ (k2_zfmisc_1 k5_numbers k7_numbers)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\ (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\ ((\neg v1_xboole_0 (k17_supinf_2 X0)) \wedge ((v4_card_3 (k17_supinf_2 \\ X0)) \wedge (m1_subset_1 (k17_supinf_2 X0) (k1_zfmisc_1 k7_numbers)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v1_xboole_0 X0) \wedge ((v4_card_3 X0) \wedge \\ (m1_subset_1 X0 (k1_zfmisc_1 k7_numbers)))) \wedge (m1_supinf_2 X1 X0)) \Rightarrow \\ ((v1_funct_1 (k15_supinf_2 X0 X1)) \wedge ((v1_funct_2 (k15_supinf_2 \\ X0 X1) k5_numbers k7_numbers) \wedge (m1_subset_1 (k15_supinf_2 X0 X1) \\ (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0) \Rightarrow ((v6_supinf_2 X0) \Leftrightarrow (v5_supinf_2 (k10_xtuple_0 X0))) \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& ((X1 = k18_supinf_2 X0) \Leftrightarrow (\forall X2.(m1_supinf_2 X2 (k17_supinf_2 \\
& X0)) \Rightarrow ((r2_funct_2 k5_numbers k7_numbers X2 X0) \Rightarrow (r2_funct_2 k5_numbers \\
& k7_numbers X1 (k15_supinf_2 (k17_supinf_2 X0) X2))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \tag{12}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k7_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k7_numbers)))))) \Rightarrow \\
& (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow ((v6_supinf_2 \\
& X0) \Rightarrow ((r1_xxreal_0 (k12_supinf_2 (k18_supinf_2 X0) X1) (k12_supinf_2 \\
& (k18_supinf_2 X0) (k2_nat_1 X1 np_1))) \wedge (r1_xxreal_0 k1_supinf_2 \\
& (k12_supinf_2 (k18_supinf_2 X0) X1))))))
\end{aligned}$$