

t30_rfunct_3 (TMGMghaBjkLpNg- WUFDyQRsXRxiNHyCdEgwV)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k15_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_rfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k4_funct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. ((v1_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 k1_numbers)))) \Rightarrow \\ & ((r2_relset_1 X1 k1_numbers X2 (k7_rfunct_1 X0 X1)) \Leftrightarrow ((k1_relset_1 \\ & X1 X2 = X1) \wedge (\forall X3. (m1_subset_1 X3 X1) \Rightarrow (((X3 \in X0) \Rightarrow (k1_funct_1 \\ & X2 X3 = np_1)) \wedge (\neg X3 \in X0) \Rightarrow (k1_funct_1 X2 X3 = k6_numbers)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X2 \\ & (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))) \Rightarrow (r2_relset_1 X0 X1 X2 X2) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k7_rfunct_1 X0 X1 = k4_funct_3 X0 X1 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v4_relat_1 X1 X0)) \Rightarrow (k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (4)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(v1_funct_1 \ (k7_rfunc_1 \ X0 \ X1)) \wedge (m1_subset_1 \ (k7_rfunc_1 \ X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X1 \ k1_numbers))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 \ (k4_funct_3 \ X0 \ X1)) \wedge (v1_funct_1 \ (k4_funct_3 \ X0 \ X1)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 \ X0) \wedge ((v1_relat_1 \ X1) \wedge (v1_funct_1 \ X1) \wedge (v1_finseq_1 \ X1))) \Rightarrow (m2_finseq_1 \ (k15_rfunc_3 \ X0 \ X1) \ (k3_rfunc_3 \ X0 \ k1_numbers)) \quad (8)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 \ X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 \ X1) \Rightarrow (\forall X2.(m2_finseq_1 \ X2 \ (k3_rfunc_3 \ X0 \ X1)) \Rightarrow (\forall X3.(m1_subset_1 \ X3 \ X0) \Rightarrow ((r1_rfunc_3 \ X0 \ X1 \ X2 \ X3) \Leftrightarrow (\forall X4.(m1_subset_1 \ X4 \ k5_numbers) \Rightarrow ((X4 \in k4_finseq_1 \ X2) \Rightarrow (X3 \in k9_xtuple_0 \ (k1_funct_1 \ X2 \ X4)))))))) \quad (9)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 \ X0) \Rightarrow (\forall X1.((v1_relat_1 \ X1) \wedge (v1_funct_1 \ X1) \wedge (v1_finseq_1 \ X1)) \Rightarrow (\forall X2.(m2_finseq_1 \ X2 \ (k3_rfunc_3 \ X0 \ k1_numbers)) \Rightarrow ((X2 = k15_rfunc_3 \ X0 \ X1) \Leftrightarrow ((k3_finseq_1 \ X2 = k3_finseq_1 \ X1) \wedge (\forall X3.(m1_subset_1 \ X3 \ k5_numbers) \Rightarrow ((X3 \in k4_finseq_1 \ X2) \Rightarrow (k1_funct_1 \ X2 \ X3 = k7_rfunc_1 \ (k1_funct_1 \ X1 \ X3) \ X0)))))))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 \ X0) \Rightarrow ((m1_subset_1 \ X1 \ X0) \Leftrightarrow (X1 \in X0))) \wedge ((v1_xboole_0 \ X0) \Rightarrow ((m1_subset_1 \ X1 \ X0) \Leftrightarrow (v1_xboole_0 \ X1))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X1))) \Rightarrow ((v4_relat_1 \ X2 \ X0) \wedge (v5_relat_1 \ X2 \ X1)) \quad (12)$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0 \ X0) \Rightarrow (\forall X1.((v1_relat_1 \ X1) \wedge (v1_funct_1 \ X1) \wedge (v1_finseq_1 \ X1)) \Rightarrow (\forall X2.(m1_subset_1 \ X2 \ X0) \Rightarrow (r1_rfunc_3 \ X0 \ k1_numbers \ (k15_rfunc_3 \ X0 \ X1) \ X2)))$$