

t68_rewrite3 (TM-
RUdyeqr3UdWvmZDt1Pz9UMnXtWXXnngEL)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_rewrite3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_rewrite1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ 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 $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_finseq_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & \quad (\forall X1.((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ & \quad X1))) \Rightarrow (((k3_finseq_1 X0 = k3_finseq_1 X1) \wedge (\forall X2.(v7_ordinal1 \\ & \quad X2) \Rightarrow ((X2 \in k4_finseq_1 X0) \Rightarrow (k1_funct_1 X0 X2 = k1_funct_1 X1 X2)))))) \Rightarrow \\ & \quad (X0 = X1)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & \quad (k8_afinsq_1 X0))) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (l1_rewrite3 \\ & \quad X2 X1)) \Rightarrow ((v2_rewrite3 X2 X0 X1) \Rightarrow (\forall X3.(m1_rewrite1 X3 (k1_rewrite3 \\ & \quad X0 X1 X2)) \Rightarrow (\forall X4.(m1_rewrite1 X4 (k1_rewrite3 X0 X1 X2)) \Rightarrow \\ & \quad ((k1_funct_1 X3 np_1 = k1_funct_1 X4 np_1) \Rightarrow (\forall X5.(v7_ordinal1 \\ & \quad X5) \Rightarrow (((X5 \in k4_finseq_1 X3) \wedge (X5 \in k4_finseq_1 X4)) \Rightarrow (k1_funct_1 \\ & \quad X3 X5 = k1_funct_1 X4 X5)))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow \\ & \quad (\forall X1.(v7_ordinal1 X1) \Rightarrow ((X1 \in k1_relset_1 k5_numbers X0) \Leftrightarrow \\ & \quad ((r1_xxreal_0 np_1 X1) \wedge (r1_xxreal_0 X1 (k3_finseq_1 X0)))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow (k4_finseq_1 X0 = k9_xtuple_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1)\wedge(v4_relat_1 X1 X0))\Rightarrow(k1_relset_1 X0 X1 = k9_xtuple_0 X1) \quad (5)$$

Assume the following.

$$\forall X0.(v1_relat_1 X0)\Rightarrow(\forall X1.(m1_rewrite1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1)))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 X1 (k1_zfmisc_1 (k8_afinsq_1 X0)))\wedge((\neg v2_struct_0 X2)\wedge(l1_rewrite3 X2 X1))))\Rightarrow(m1_subset_1 (k1_rewrite3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X2) (k8_afinsq_1 X0)) (k2_zfmisc_1 (u1_struct_0 X2) (k8_afinsq_1 X0)))))) \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v2_finseq_1 X0)))\Rightarrow((v1_relat_1 X0)\wedge((v4_relat_1 X0 k5_numbers)\wedge((v1_funct_1 X0)\wedge(v2_finseq_1 X0)))) \quad (8)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v2_finseq_1 X0))) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(v1_relat_1 X2) \quad (10)$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (k8_afinsq_1 X0)))\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge(l1_rewrite3 X2 X1))\Rightarrow((v2_rewrite3 X2 X0 X1)\Rightarrow(\forall X3.(m1_rewrite1 X3 (k1_rewrite3 X0 X1 X2))\Rightarrow(\forall X4.(m1_rewrite1 X4 (k1_rewrite3 X0 X1 X2))\Rightarrow(((k1_funct_1 X3 np_1 = k1_funct_1 X4 np_1)\wedge(k3_finseq_1 X3 = k3_finseq_1 X4))\Rightarrow(X3 = X4)))))))) \quad (10)$$