

t32_c0sp2 (TMQr-
SWg4JGCf4gsFX9jHjXmgMGPgKk1Vyfn)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_pre_topc : \iota \Rightarrow o$ be given. Let $l1_pre_topc : \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k7_c0sp2 : \iota \Rightarrow \iota$ be given. Let $k1_c0sp2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v13_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_rlvect_1 : \iota \Rightarrow o$ be given. Let $v3_rlvect_1 : \iota \Rightarrow o$ be given. Let $v4_rlvect_1 : \iota \Rightarrow o$ be given. Let $v5_rlvect_1 : \iota \Rightarrow o$ be given. Let $v6_rlvect_1 : \iota \Rightarrow o$ be given. Let $v7_rlvect_1 : \iota \Rightarrow o$ be given. Let $v8_rlvect_1 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_rlsub_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_rlsub_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g1_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_rsspace : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_rsspace : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_rsspace : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $k6_c0sp2 : \iota \Rightarrow \iota$ be given. Let $k10_funcsdom : \iota \Rightarrow \iota$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_funcsdom : \iota \Rightarrow \iota$ be given. Let $k7_funcsdom : \iota \Rightarrow \iota$ be given. Let $k5_funcsdom : \iota \Rightarrow \iota$ be given. Let $v1_rlvect_1 : \iota \Rightarrow o$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $u1_rlvect_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$m1_subset_1 \ k1_xboole_0 \ k4_ordinal1 \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow ((v1_rlsub_1 X1 X0) \Rightarrow ((v1_xboole_0 X1) \vee (m1_rlsub_1 (g1_rlvect_1 \\ & X1 (k10_rsspace X0 X1) (k8_rsspace X0 X1) (k9_rsspace X0 X1)) X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_rlsub_1 X1 X0) \Rightarrow (k4_struct_0 X1 = \\ & k4_struct_0 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X1) \wedge (m1_funct_2 \\ & X2 X0 X1)) \Rightarrow (\forall X3.(m2_funct_2 X3 X0 X1 X2) \Leftrightarrow (m1_subset_1 X3 \\ & X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge (m1_subset_1 \\ & X2 X0)) \Rightarrow (k8_funcop_1 X0 X1 X2 = k2_funcop_1 X1 X2) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. k7_funcop_1 X0 X1 = k2_funcop_1 X0 X1 \quad (6)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (7)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 X1 \\ & X0) \wedge (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (k2_zfmisc_1 X0 X0) X0) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) \\ & X0)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 (k2_zfmisc_1 k1_numbers \\ & X0) X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers X0) X0)))))) \Rightarrow (\forall X4. \forall X5. \forall X6. \forall X7. \\ & (g1_rlvect_1 X0 X1 X2 X3 = g1_rlvect_1 X4 X5 X6 X7) \Rightarrow ((X0 = X4) \wedge ((X1 = \\ & X5) \wedge ((X2 = X6) \wedge (X3 = X7)))) \end{aligned} \quad (9)$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (10)$$

Assume the following.

$$v1_xboole_0 \ k1_xboole_0 \quad (11)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (12)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 \ X0) \wedge ((v2_pre_topc \ X0) \wedge (l1_pre_topc \ X0))) \Rightarrow ((\neg v1_xboole_0 \ (k6_c0sp2 \ X0)) \wedge (v1_rlsub_1 \ (k6_c0sp2 \ X0) \ (k10_funcsdom \ (u1_struct_0 \ X0)))) \quad (13)$$

Assume the following.

$$\forall X0. (l2_algstr_0 \ X0) \Rightarrow ((l2_struct_0 \ X0) \wedge (l1_algstr_0 \ X0)) \quad (14)$$

Assume the following.

$$\forall X0. (l1_rlvect_1 \ X0) \Rightarrow (l2_algstr_0 \ X0) \quad (15)$$

Assume the following.

$$\forall X0. (l1_pre_topc \ X0) \Rightarrow (l1_struct_0 \ X0) \quad (16)$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 \ X1) \Rightarrow (m1_funct_2 \ (k9_funct_2 \ X0 \ X1) \ X0 \ X1) \quad (17)$$

Assume the following.

$$\forall X0. m2_funct_2 \ (k8_funcsdom \ X0) \ X0 \ k1_numbers \ (k9_funct_2 \ X0 \ k1_numbers) \quad (18)$$

Assume the following.

$$\forall X0. (v1_funct_1 \ (k7_funcsdom \ X0)) \wedge ((v1_funct_2 \ (k7_funcsdom \ X0) \ (k2_zfmisc_1 \ k1_numbers \ (k9_funct_2 \ X0 \ k1_numbers)) \ (k9_funct_2 \ X0 \ k1_numbers)) \wedge (m1_subset_1 \ (k7_funcsdom \ X0) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ (k9_funct_2 \ X0 \ k1_numbers)) \ (k9_funct_2 \ X0 \ k1_numbers)))))) \quad (19)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 \ X0) \wedge ((v2_pre_topc \ X0) \wedge (l1_pre_topc \ X0))) \Rightarrow ((\neg v1_xboole_0 \ (k6_c0sp2 \ X0)) \wedge (m1_subset_1 \ (k6_c0sp2 \ X0) \ (k1_zfmisc_1 \ (u1_struct_0 \ (k10_funcsdom \ (u1_struct_0 \ X0)))))) \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0. (&v1_funct_1 (k5_funcsdom X0)) \wedge ((v1_funct_2 (k5_funcsdom \\ X0) (k2_zfmisc_1 (k9_funct_2 X0 k1_numbers) (k9_funct_2 X0 k1_numbers)) \\ (k9_funct_2 X0 k1_numbers)) \wedge (m1_subset_1 (k5_funcsdom X0) (k1_zfmisc_1 \\ (k2_zfmisc_1 (k2_zfmisc_1 (k9_funct_2 X0 k1_numbers) (k9_funct_2 \\ X0 k1_numbers) (k9_funct_2 X0 k1_numbers)))))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0. (&\neg v2_struct_0 (k10_funcsdom X0)) \wedge ((v13_algstr_0 \\ (k10_funcsdom X0)) \wedge ((v1_rlvect_1 (k10_funcsdom X0)) \wedge ((v2_rlvect_1 \\ (k10_funcsdom X0)) \wedge ((v3_rlvect_1 (k10_funcsdom X0)) \wedge ((v4_rlvect_1 \\ (k10_funcsdom X0)) \wedge ((v5_rlvect_1 (k10_funcsdom X0)) \wedge ((v6_rlvect_1 \\ (k10_funcsdom X0)) \wedge ((v7_rlvect_1 (k10_funcsdom X0)) \wedge ((v8_rlvect_1 \\ (k10_funcsdom X0)) \wedge (l1_rlvect_1 (k10_funcsdom X0)))))))))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0. (&\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc \\ X0)) \Rightarrow (k7_c0sp2 X0 = g1_rlvect_1 (k6_c0sp2 X0) (k10_rssize (k10_funcsdom \\ (u1_struct_0 X0) (k6_c0sp2 X0)) (k8_rssize (k10_funcsdom (u1_struct_0 \\ X0) (k6_c0sp2 X0) (k9_rssize (k10_funcsdom (u1_struct_0 X0) \\ (k6_c0sp2 X0)))))) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0. (l2_struct_0 X0) \Rightarrow (k4_struct_0 X0 = u2_struct_0 X0) \quad (24)$$

Assume the following.

$$\begin{aligned} \forall X0. k10_funcsdom X0 = g1_rlvect_1 (k9_funct_2 X0 k1_numbers) \\ (k8_funcsdom X0) (k5_funcsdom X0) (k7_funcsdom X0) \end{aligned} \quad (25)$$

Assume the following.

$$\forall X0. k8_funcsdom X0 = k8_funcop_1 k5_numbers X0 k6_numbers \quad (26)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1_struct_0 X0) \Rightarrow (\forall X1. (v1_xreal_0 X1) \Rightarrow (k1_c0sp2 \\ X0 X1 = k7_funcop_1 (u1_struct_0 X0) X1)) \end{aligned} \quad (27)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (v7_ordinal1 X0) \quad (28)$$

Assume the following.

$$\forall X0. (v7_ordinal1 X0) \Rightarrow (v1_xreal_0 X0) \quad (29)$$

Assume the following.

$$\forall X0. (l1_rlvect_1 X0) \Rightarrow ((v1_rlvect_1 X0) \Rightarrow (X0 = g1_rlvect_1 (u1_struct_0 X0) (u2_struct_0 X0) (u1_algstr_0 X0) (u1_rlvect_1 X0))) \quad (30)$$

Theorem 1

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_pre_topc X0) \wedge (l1_pre_topc X0))) \Rightarrow (k4_struct_0 (k7_c0sp2 X0) = k1_c0sp2 X0 k6_numbers)$$