

t17_rusub_4

(TMdX7uopKCDkPmResEDik6X7XnZTRC1YRMq)

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Let $v2_struct_0 : \iota \Rightarrow o$ 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 $v2_bhsp_1 : \iota \Rightarrow o$ be given. Let $v1_rusub_4 : \iota \Rightarrow o$ be given. Let $l1_bhsp_1 : \iota \Rightarrow o$ be given. Let $m1_rusub_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_rusub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_rusub_4 : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rusub_1 : \iota \Rightarrow \iota$ 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 $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_rusub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_rusub_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_rusub_1 : \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_bhsp_1 : \iota \Rightarrow o$ be given. Let $g1_bhsp_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u2_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $u1_rlvect_1 : \iota \Rightarrow \iota$ be given. Let $u1_bhsp_1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ & X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (\forall X1. (m1_rusub_1 X1 X0) \Rightarrow \\ & (k1_rusub_1 X1 = k1_rusub_1 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$m1_subset_1 \ k1_xboole_0 \ k4_ordinal1 \quad (2)$$

Assume the following.

$$\forall X0. (v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 \ k6_numbers = X0) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ X0) \wedge ((v1_rusub_4 X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (\forall X1. \\ (m1_rusub_1 X1 X0) \Rightarrow (\forall X2.(m1_rusub_1 X2 X0) \Rightarrow (k2_nat_1 (\\ k1_rusub_4 (k1_rusub_2 X0 X1 X2) (k1_rusub_4 (k2_rusub_2 X0 X1 \\ X2)) = k2_nat_1 (k1_rusub_4 X1) (k1_rusub_4 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ X0) \wedge ((v1_rusub_4 X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow ((k1_rusub_4 \\ X0 = k6_numbers) \Leftrightarrow (k2_rusub_1 X0 = k1_rusub_1 X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ X0) \wedge ((v1_rusub_4 X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (k1_rusub_4 \\ X0 = k1_rusub_4 (k2_rusub_1 X0)) \end{aligned} \quad (6)$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 \\ X1)) \Rightarrow (k2_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (\forall X1.(m1_rusub_1 X1 X0) \Rightarrow \\ ((\neg v2_struct_0 X1) \wedge ((v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((\\ v3_rlvect_1 X1) \wedge ((v4_rlvect_1 X1) \wedge ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 \\ X1) \wedge ((v7_rlvect_1 X1) \wedge ((v8_rlvect_1 X1) \wedge ((v2_bhsp_1 X1) \wedge (l1_bhsp_1 \\ X1)))))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ &X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ &((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ &X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (m1_subset_1 (k1_rusub_4 X0) k5_numbers) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ &X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ &((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ &X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow ((v1_bhsp_1 (k1_rusub_1 X0)) \wedge \\ &(m1_rusub_1 (k1_rusub_1 X0) X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ &X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ &((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ &X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (\forall X1. (m1_rusub_1 X1 X0) \Rightarrow \\ &(\forall X2. (m1_rusub_1 X2 X0) \Rightarrow ((r1_rusub_2 X0 X1 X2) \Leftrightarrow ((g1_bhsp_1 \\ &(u1_struct_0 X0) (u2_struct_0 X0) (u1_algstr_0 X0) (u1_rlvect_1 \\ &X0) (u1_bhsp_1 X0) = k1_rusub_2 X0 X1 X2) \wedge (k2_rusub_2 X0 X1 X2 = k1_rusub_1 \\ &X0)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ &X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ &((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhsp_1 \\ &X0) \wedge (l1_bhsp_1 X0)))))))))) \Rightarrow (k2_rusub_1 X0 = g1_bhsp_1 (u1_struct_0 \\ &X0) (u2_struct_0 X0) (u1_algstr_0 X0) (u1_rlvect_1 X0) (u1_bhsp_1 \\ &X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 X1)) \Rightarrow (k2_nat_1 X0 X1 = k2_nat_1 X1 X0) \quad (15)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (16)$$

Assume the following.

$$\forall X0. (v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (17)$$

Assume the following.

$$\forall X0. (v7_ordinal1 X0) \Rightarrow (v1_xreal_0 X0) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhspl_1 \\ & X0) \wedge ((v1_rusub_4 X0) \wedge (l1_bhspl_1 X0)))))))))) \Rightarrow (\forall X1. \\ & (m1_rusub_1 X1 X0) \Rightarrow (v1_rusub_4 X1)) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_bhspl_1 X0) \Rightarrow ((v1_bhspl_1 X0) \Rightarrow (X0 = g1_bhspl_1 (u1_struct_0 \\ & X0) (u2_struct_0 X0) (u1_algstr_0 X0) (u1_rlvect_1 X0) (u1_bhspl_1 \\ & X0))) \end{aligned} \quad (20)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge ((v2_bhspl_1 \\ & X0) \wedge ((v1_rusub_4 X0) \wedge (l1_bhspl_1 X0)))))))))) \Rightarrow (\forall X1. \\ & (m1_rusub_1 X1 X0) \Rightarrow (\forall X2.(m1_rusub_1 X2 X0) \Rightarrow ((r1_rusub_2 \\ & X0 X1 X2) \Rightarrow (k1_rusub_4 X0 = k2_nat_1 (k1_rusub_4 X1) (k1_rusub_4 \\ & X2)))))) \end{aligned}$$