

l72_integr19

(TMRm9YhgPSn9Axp2vZ4Eu227JHF3qrh9aet)

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Let $v1_xreal_0 : \iota \Rightarrow o$ be given. 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 $v3_normsp_0 : \iota \Rightarrow o$ be given. Let $v4_normsp_0 : \iota \Rightarrow o$ be given. Let $v2_normsp_1 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_normsp_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_rlvect_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_binop_2 : \iota \Rightarrow \iota$ be given. Let $k12_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_complex1 : \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k7_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k17_complex1 : \iota \Rightarrow \iota$ be given. Let $k5_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k2_real_1 : \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_complex1 : \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $l2_normsp_0 : \iota \Rightarrow o$ be given. Let $l1_normsp_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_rlvect_1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k7_xcmplx_0 X0 \text{ } np_1 = X0) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k17_complex1 (k5_xcmplx_0 X0) = k2_real_1 (k17_complex1 X0)) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k7_xcmplx_0 \text{ } np_1 X0 = k5_xcmplx_0 X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 \text{ } np_1) \wedge (m2_subset_1 \text{ } np_1 \text{ } k1_numbers \text{ } k5_numbers)) \wedge \\ & ((m1_subset_1 \text{ } np_1 \text{ } k5_numbers) \wedge (m1_subset_1 \text{ } np_1 \text{ } k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0)\wedge(v1_xcmplx_0 X1))\Rightarrow(k3_xcmplx_0 X0 (k5_xcmplx_0 X1) = k7_xcmplx_0 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(k8_real_1 X0 X1 = k3_xcmplx_0 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow(k8_binop_2 X0 = k5_xcmplx_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(k2_real_1 X0 = k5_xcmplx_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(k18_complex1 X0 = k16_complex1 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(k17_complex1 X0 = k16_complex1 X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow(k12_binop_2 X0 X1 = k7_xcmplx_0 X0 X1) \quad (11)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(k2_real_1 (k2_real_1 X0) = X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow((v1_xcmplx_0 (k5_xcmplx_0 X0))\wedge(v1_xreal_0 (k5_xcmplx_0 X0))) \quad (13)$$

Assume the following.

$$v3_membered k1_numbers \quad (14)$$

Assume the following.

$$\forall X0.(l2_normsp_0 X0)\Rightarrow((l1_normsp_0 X0)\wedge(l2_struct_0 X0)) \quad (15)$$

Assume the following.

$$\forall X0.(l1_normsp_1 X0)\Rightarrow((l1_rlvect_1 X0)\wedge(l2_normsp_0 X0)) \quad (16)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (v1_xcmplx_0 (k5_xcmplx_0 X0)) \quad (17)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (m1_subset_1 (k2_real_1 X0) k1_numbers) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge (l1_normsp_0 X0)) \wedge (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k1_normsp_0 X0 X1) k1_numbers) \quad (19)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (m1_subset_1 (k17_complex1 X0) k1_numbers) \quad (20)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (v1_xreal_0 (k16_complex1 X0)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow (m1_subset_1 (k12_binop_2 X0 X1) k1_numbers) \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l1_normsp_1 X0)) \Rightarrow & ((v2_normsp_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & k1_numbers) \Rightarrow ((k1_normsp_0 X0 (k1_rlvect_1 X0 X1 X3) = k8_real_1 \\ & (k18_complex1 X3) (k1_normsp_0 X0 X1)) \wedge (r1_xreal_0 (k1_normsp_0 \\ & X0 (k1_algstr_0 X0 X1 X2)) (k7_real_1 (k1_normsp_0 X0 X1) (k1_normsp_0 \\ & X0 X2)))))))))) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 X1)) \Rightarrow (k8_real_1 X0 X1 = k8_real_1 X1 X0) \quad (24)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (v1_membered X0) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (26)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (27)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (28)$$

Assume the following.

$$\forall X0.(v1_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xcmplx_0 X1)) \quad (29)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ & (v13_algstr_0 X1) \wedge ((v2_rlvect_1 X1) \wedge ((v3_rlvect_1 X1) \wedge ((v4_rlvect_1 \\ & X1) \wedge ((v5_rlvect_1 X1) \wedge ((v6_rlvect_1 X1) \wedge ((v7_rlvect_1 X1) \wedge \\ & ((v8_rlvect_1 X1) \wedge ((v3_normsp_0 X1) \wedge ((v4_normsp_0 X1) \wedge ((v2_normsp_1 \\ & X1) \wedge (l1_normsp_1 X1)))))))))) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X1) \Rightarrow (k1_normsp_0 X1 (k1_rlvect_1 X1 X2 (k8_binop_2 \\ & X0)) = k12_binop_2 (k1_normsp_0 X1 X2) (k18_complex1 X0)))) \end{aligned}$$