

t14_complex1

(TMKwAte3bzFYQQaUTLUTurP92Pn3j2hn7ir)

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Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k4_complex1 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k3_complex1 : \iota \Rightarrow \iota$ 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 $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_0 : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k2_complex1 : \iota \Rightarrow \iota$ be given. Let $k1_complex1 : \iota \Rightarrow \iota$ be given. Let $k5_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $c5_xreal_0 : \iota$ be given. Let $k1_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $c3_xreal_0 : \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k5_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $np_2 : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$(m2_subset_1\ np_0\ k1_numbers\ k5_numbers) \wedge ((m1_subset_1\ np_0\ k5_numbers) \wedge (m1_subset_1\ np_0\ k1_numbers)) \quad (1)$$

Assume the following.

$$k2_xcmplx_0\ np_1\ (k4_xcmplx_0\ np_1) = np_0 \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k1_numbers) \wedge (v1_xreal_0\ X1)) \Rightarrow (k8_real_1\ X0\ X1 = k3_xcmplx_0\ X0\ X1) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0) \Rightarrow (k4_complex1\ X0 = k2_complex1\ X0) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0) \Rightarrow (k3_complex1\ X0 = k1_complex1\ X0) \quad (5)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k5_arytm_0 (k3_complex1 X0) (k4_complex1 X0) = X0) \quad (6)$$

Assume the following.

$$(c5_xreal_0 = k4_xcmplx_0 np_1) \wedge (k1_arytm_0 c3_xreal_0 c5_xreal_0 = k6_numbers) \quad (7)$$

Assume the following.

$$k2_xcmplx_0 np_1 (k4_xcmplx_0 np_1) = k6_numbers \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow (v1_xreal_0 (k3_xcmplx_0 X0 X1)) \quad (9)$$

Assume the following.

$$v3_membered k1_numbers \quad (10)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (m1_subset_1 (k3_complex1 X0) k1_numbers) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (((X1 = k6_numbers) \Rightarrow (k5_arytm_0 X0 X1 = X0)) \wedge ((\\ & X1 \neq k6_numbers) \Rightarrow (k5_arytm_0 X0 X1 = k5_funct_4 k1_numbers k6_numbers \\ & np_1 X0 X1)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xcmplx_0 X0) \Rightarrow (\forall X1.((X0 \in k1_numbers) \Rightarrow (\\ & (X1 = k2_complex1 X0) \Leftrightarrow (X1 = k6_numbers))) \wedge ((\neg X0 \in k1_numbers) \Rightarrow \\ & ((X1 = k2_complex1 X0) \Leftrightarrow (\exists X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & X2 np_2 k1_numbers) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & np_2 k1_numbers)))))) \wedge ((X0 = X2) \wedge (X1 = k1_funct_1 X2 np_1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Leftrightarrow (X0 \in k1_numbers) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xcmplx_0 X0) \Rightarrow (\forall X1.((X0 \in k1_numbers) \Rightarrow (\\ & (X1 = k1_complex1 X0) \Leftrightarrow (X1 = X0))) \wedge ((\neg X0 \in k1_numbers) \Rightarrow ((X1 = k1_complex1 \\ & X0) \Leftrightarrow (\exists X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 np_2 k1_numbers) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 np_2 k1_numbers)))))) \wedge \\ & ((X0 = X2) \wedge (X1 = k1_funct_1 X2 k6_numbers)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_xreal_0 X1)) \quad (17)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xcmplx_0 X0) \Rightarrow (\forall X1.(v1_xcmplx_0 X1) \Rightarrow ((\\ & (k4_complex1 X0 = k6_numbers) \wedge (k4_complex1 X1 = k6_numbers)) \Rightarrow \\ & ((k3_complex1 (k3_xcmplx_0 X0 X1) = k8_real_1 (k3_complex1 X0) \\ & (k3_complex1 X1)) \wedge (k4_complex1 (k3_xcmplx_0 X0 X1) = k6_numbers)))) \end{aligned}$$