# l14_series_5 (TMPaNAEpQbdvZVbYeRtLv-NeoVoNeGXNF4Yz)

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Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $k9\_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k13\_complex1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_square\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ be given. Let $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $np\_\_1 : \iota$ 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 $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_0 : \iota$ be given. Let $k2\_numbers : \iota$ be given. Let $v1\_membered : \iota \Rightarrow o$ be given. Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $v3\_xxreal\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0\ X1) \Rightarrow (\forall X2.(v1\_xcmplx\_0\ X2) \Rightarrow (\forall X3.(v1\_xcmplx\_0\ X3) \Rightarrow (k3\_xcmplx\_0\ (k7\_xcmplx\_0\ X0\ X1)\ (k7\_xcmplx\_0\ X2\ X3) = k7\_xcmplx\_0\ (k3\_xcmplx\_0\ X0\ X2)\ (k3\_xcmplx\_0\ X1\ X3))))) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow ((X0 \neq k6\_numbers) \Rightarrow (k7\_xcmplx\_0\ X0\ X0 = np\_\_1)) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow (k3\_xcmplx\_0\ np\_\_1\ X0 = X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_xcmplx\_0\ X0) \wedge ((v1\_xcmplx\_0\ X1) \wedge (v1\_xcmplx\_0\ X2))) \Rightarrow (k3\_xcmplx\_0\ (k3\_xcmplx\_0\ X0\ X1)\ X2 = k3\_xcmplx\_0\ X0\ (k3\_xcmplx\_0\ X1\ X2)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_xcmplx\_0\ X0)\wedge((v1\_xcmplx\_0\ X1)\wedge(v1\_xcmplx\_0\ X2)))\Rightarrow(k3\_xcmplx\_0\ X0\ (k7\_xcmplx\_0\ X1\ X2) = k7\_xcmplx\_0\ (k3\_xcmplx\_0\ X0\ X1)\ X2) \tag{6}$$

Assume the following.

$$((v2\_xxreal\_0\ np\_\_1)\wedge(m2\_subset\_1\ np\_\_1\ k1\_numbers\ k5\_numbers))\wedge((m1\_subset\_1\ np\_\_1\ k5\_numbers)\wedge(m1\_subset\_1\ np\_\_1\ k1\_numbers)) \tag{7}$$

Assume the following.

$$v1\_xboole\_0\ np\_\_0 \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k2\_numbers)\wedge(m1\_subset\_1\ X1\ k2\_numbers))\Rightarrow(k9\_complex1\ X0\ X1 = k3\_xcmplx\_0\ X0\ X1) \tag{9}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(k13\_complex1\ X0\ X1 = k7\_xcmplx\_0\ X0\ X1) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v1\_xboole\_0\ X0)\wedge(v1\_xcmplx\_0\ X0))\wedge((\neg v1\_xboole\_0\ X1)\wedge(v1\_xcmplx\_0\ X1)))\Rightarrow(\neg v1\_xboole\_0\ (k3\_xcmplx\_0\ X0\ X1)) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(v1\_xcmplx\_0\ (k3\_xcmplx\_0\ X0\ X1)) \tag{13}$$

Assume the following.

$$v1\_membered\ k2\_numbers \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(m1\_subset\_1\ (k13\_complex1\ X0\ X1)\ k2\_numbers) \tag{15}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0)\Rightarrow(k3\_square\_1\ X0 = k3\_xcmplx\_0\ X0\ X0) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow(k3\_xcmplx\_0\ X0\ X1 = k3\_xcmplx\_0\ X1\ X0) \tag{17}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xxreal\_0\ X0) \tag{18}$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0\ X0)\wedge(v2\_xxreal\_0\ X0))\Rightarrow((\neg v1\_xboole\_0\ X0)\wedge((v1\_xxreal\_0\ X0)\wedge(\neg v3\_xxreal\_0\ X0))) \tag{19}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xcmplx\_0\ X0) \tag{20}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xcmplx\_0\ X0) \tag{21}$$

Assume the following.

$$\forall X0.(v1\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(v1\_xcmplx\_0\ X1)) \tag{22}$$

**Theorem 1**

$$\forall X0.((v1\_xreal\_0\ X0)\wedge(v2\_xxreal\_0\ X0))\Rightarrow(\forall X1.((v1\_xreal\_0\ X1)\wedge(v2\_xxreal\_0\ X1))\Rightarrow(\forall X2.((v1\_xreal\_0\ X2)\wedge(v2\_xxreal\_0\ X2))\Rightarrow(k9\_complex1\ (k13\_complex1\ (k3\_xcmplx\_0\ X0\ X1)\ X2)\ (k13\_complex1\ (k3\_xcmplx\_0\ X1\ X2)\ X0) = k3\_square\_1\ X1)))$$