t99_xxreal_3 (TMMp5GTDTtoR8jU4uHBMbMQRTwCh6t14Lwk)

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Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $k5\_xxreal\_3 : \iota \Rightarrow \iota$ be given. Let $k2\_xxreal\_3 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ be given. Let $k5\_xcmplx\_0 : \iota \Rightarrow \iota$ be given. Let $k4\_xcmplx\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $k1\_xxreal\_0 : \iota$ be given. Let $v3\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\neg(v1\_xboole\_0\ X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0\ X1)) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow (k5\_xcmplx\_0\ (k4\_xcmplx\_0\ X0) = k4\_xcmplx\_0\ (k5\_xcmplx\_0\ X0)) \tag{2}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (k2\_xxreal\_3\ (k2\_xxreal\_3\ X0) = X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0) \wedge (v1\_xcmplx\_0\ X1)) \Rightarrow ((X0 = X1) \Rightarrow (k5\_xxreal\_3\ X0 = k5\_xcmplx\_0\ X1)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0) \wedge (v1\_xcmplx\_0\ X1)) \Rightarrow ((X0 = X1) \Rightarrow (k2\_xxreal\_3\ X0 = k4\_xcmplx\_0\ X1)) \tag{6}$$

Assume the following.

$$(v1\_xboole\_0\ (k5\_xxreal\_3\ k1\_xxreal\_0)) \wedge (v1\_xxreal\_0\ (k5\_xxreal\_3\ k1\_xxreal\_0)) \tag{7}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow((v1\_xxreal\_0\ (k5\_xxreal\_3\ X0))\wedge (v1\_xreal\_0\ (k5\_xxreal\_3\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow((v1\_xxreal\_0\ (k2\_xxreal\_3\ X0))\wedge (v1\_xreal\_0\ (k2\_xxreal\_3\ X0))) \tag{9}$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \tag{10}$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0\ X0)\wedge(\neg v3\_xxreal\_0\ X0))\Rightarrow((v1\_xxreal\_0\ (k2\_xxreal\_3\ X0))\wedge(\neg v2\_xxreal\_0\ (k2\_xxreal\_3\ X0))) \tag{11}$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0\ X0)\wedge(\neg v2\_xxreal\_0\ X0))\Rightarrow((v1\_xxreal\_0\ (k2\_xxreal\_3\ X0))\wedge(\neg v3\_xxreal\_0\ (k2\_xxreal\_3\ X0))) \tag{12}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(v1\_xxreal\_0\ (k2\_xxreal\_3\ X0)) \tag{13}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow(((v1\_xreal\_0\ X0)\Rightarrow((X1 = k5\_xxreal\_3\ X0)\Leftrightarrow(\exists X2.(v1\_xcmplx\_0\ X2)\wedge((X0 = X2)\wedge(X1 = k5\_xcmplx\_0\ X2)))))\wedge((\neg v1\_xreal\_0\ X0)\Rightarrow((X1 = k5\_xxreal\_3\ X0)\Leftrightarrow(X1 = k6\_numbers))))) \tag{14}$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0\ X0)\wedge((\neg v2\_xxreal\_0\ X0)\wedge(\neg v3\_xxreal\_0\ X0)))\Rightarrow((v1\_xboole\_0\ X0)\wedge(v1\_xxreal\_0\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.((v1\_xboole\_0\ X0)\wedge(v1\_xxreal\_0\ X0))\Rightarrow((v1\_xxreal\_0\ X0)\wedge((\neg v2\_xxreal\_0\ X0)\wedge(\neg v3\_xxreal\_0\ X0))) \tag{16}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xcmplx\_0\ X0) \tag{17}$$

Theorem 1

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(k5\_xxreal\_3\ (k2\_xxreal\_3\ X0) = k2\_xxreal\_3\ (k5\_xxreal\_3\ X0))$$