t32_xxreal_3 (TMR-jvsZp5dTJg6LSKQSRGZQHyuwnH1TxUnc)

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Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $k1\_xxreal\_0 : \iota$ be given. Let $k2\_xxreal\_0 : \iota$ be given. Let $k1\_xxreal\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xxreal\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xxreal\_3 : \iota \Rightarrow \iota$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (k2\_xxreal\_3\ (k1\_xxreal\_3\ X0\ X1) = k1\_xxreal\_3\ (k2\_xxreal\_3\ X0)\ (k2\_xxreal\_3\ X1))) \tag{1}$$

Assume the following.

$$k2\_xxreal\_3\ k1\_xxreal\_0 = k2\_xxreal\_0 \tag{2}$$

Assume the following.

$$k2\_xxreal\_3\ k2\_xxreal\_0 = k1\_xxreal\_0 \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (\neg(\neg(X0 = k1\_xxreal\_0) \wedge (X1 = k2\_xxreal\_0)) \wedge ((\neg(X0 = k2\_xxreal\_0) \wedge (X1 = k1\_xxreal\_0)) \wedge ((\neg(X1 = k1\_xxreal\_0) \wedge (X2 = k2\_xxreal\_0)) \wedge ((\neg(X1 = k2\_xxreal\_0) \wedge (X2 = k1\_xxreal\_0)) \wedge ((\neg(X0 = k1\_xxreal\_0) \wedge (X2 = k2\_xxreal\_0)) \wedge ((\neg(X0 = k2\_xxreal\_0) \wedge (X2 = k1\_xxreal\_0)) \wedge (k1\_xxreal\_3\ (k1\_xxreal\_3\ X0\ X1)\ X2 \neq k1\_xxreal\_3\ X0\ (k1\_xxreal\_3\ X1\ X2)))))))))) \tag{4}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow ((k2\_xxreal\_3\ (k1\_xxreal\_3\ (k2\_xxreal\_3\ X0)\ X1) = k3\_xxreal\_3\ X0\ X1) \wedge (k2\_xxreal\_3\ (k1\_xxreal\_3\ (k2\_xxreal\_3\ X0)\ X1) = k1\_xxreal\_3\ X0\ (k2\_xxreal\_3\ X1)))) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow((k2\_xxreal\_3\ (k3\_xxreal\_3\ X0\ X1) = k1\_xxreal\_3\ (k2\_xxreal\_3\ X0)\ X1)\wedge(k2\_xxreal\_3\ (k3\_xxreal\_3\ X0\ X1) = k3\_xxreal\_3\ X1\ X0))) \tag{6}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow(k2\_xxreal\_3\ (k1\_xxreal\_3\ X0\ X1) = k3\_xxreal\_3\ (k2\_xxreal\_3\ X1)\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(((X0 = k1\_xxreal\_0)\Rightarrow(k2\_xxreal\_3\ X0 = k2\_xxreal\_0))\wedge(((k2\_xxreal\_3\ X0 = k2\_xxreal\_0)\Rightarrow(X0 = k1\_xxreal\_0))\wedge(((X0 = k2\_xxreal\_0)\Rightarrow(k2\_xxreal\_3\ X0 = k1\_xxreal\_0))\wedge((k2\_xxreal\_3\ X0 = k1\_xxreal\_0)\Rightarrow(X0 = k2\_xxreal\_0))))) \tag{8}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow((v1\_xreal\_0\ X0)\Rightarrow((k1\_xxreal\_3\ (k3\_xxreal\_3\ X1\ X0)\ X0 = X1)\wedge(k3\_xxreal\_3\ (k1\_xxreal\_3\ X1\ X0)\ X0 = X1)))) \tag{9}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow(\neg(k3\_xxreal\_3\ X0\ X1 = k1\_xxreal\_0)\wedge((X0\neq k1\_xxreal\_0)\wedge(X1\neq k2\_xxreal\_0)))) \tag{10}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow(\neg(k1\_xxreal\_3\ X0\ X1 = k2\_xxreal\_0)\wedge((X0\neq k2\_xxreal\_0)\wedge(X1\neq k2\_xxreal\_0)))) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow((X0\neq k2\_xxreal\_0)\Rightarrow((k3\_xxreal\_3\ k2\_xxreal\_0\ X0 = k2\_xxreal\_0)\wedge(k3\_xxreal\_3\ X0\ k2\_xxreal\_0 = k1\_xxreal\_0))) \tag{12}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow((X0\neq k1\_xxreal\_0)\Rightarrow((k3\_xxreal\_3\ k1\_xxreal\_0\ X0 = k1\_xxreal\_0)\wedge(k3\_xxreal\_3\ X0\ k1\_xxreal\_0 = k2\_xxreal\_0))) \tag{13}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\neg(\neg X0 \in k1\_numbers)\wedge((X0\neq k1\_xxreal\_0)\wedge(X0\neq k2\_xxreal\_0))) \tag{14}$$

Assume the following.

$$k2\_xxreal\_3\ (k1\_xxreal\_3\ k1\_xxreal\_0\ k2\_xxreal\_0) = k3\_xxreal\_3\ (k2\_xxreal\_3\ k2\_xxreal\_0)\ k1\_xxreal\_0 \tag{15}$$

Assume the following.

$$k1\_xxreal\_3\ k2\_xxreal\_0\ k2\_xxreal\_0 = k2\_xxreal\_0 \tag{16}$$

Assume the following.

$$k1\_xxreal\_3\ k1\_xxreal\_0\ k1\_xxreal\_0 = k1\_xxreal\_0 \tag{17}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (k2\_xxreal\_3\ (k2\_xxreal\_3\ X0) = X0) \tag{18}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0\ X0) \wedge (v1\_xreal\_0\ X1)) \Rightarrow ((v1\_xxreal\_0\ (k3\_xxreal\_3\ X0\ X1)) \wedge (v1\_xreal\_0\ (k3\_xxreal\_3\ X0\ X1))) \tag{19}$$

Assume the following.

$$v1\_xxreal\_0\ k2\_xxreal\_0 \tag{20}$$

Assume the following.

$$v1\_xxreal\_0\ k1\_xxreal\_0 \tag{21}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0) \wedge (v1\_xxreal\_0\ X1)) \Rightarrow (v1\_xxreal\_0\ (k3\_xxreal\_3\ X0\ X1)) \tag{22}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (v1\_xxreal\_0\ (k2\_xxreal\_3\ X0)) \tag{23}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0) \wedge (v1\_xxreal\_0\ X1)) \Rightarrow (v1\_xxreal\_0\ (k1\_xxreal\_3\ X0\ X1)) \tag{24}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (k3\_xxreal\_3\ X0\ X1 = k1\_xxreal\_3\ X0\ (k2\_xxreal\_3\ X1))) \tag{25}$$

Assume the following.

$$k1\_xxreal\_0 = k1\_numbers \tag{26}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Leftrightarrow(X0 \in k1\_numbers) \tag{27}$$

Assume the following.

$$\begin{gathered}\forall X0.\forall X1.((v1\_xxreal\_0\ X0)\wedge(v1\_xxreal\_0\ X1))\Rightarrow(\\ k1\_xxreal\_3\ X0\ X1 = k1\_xxreal\_3\ X1\ X0)\end{gathered} \tag{28}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xxreal\_0\ X0) \tag{29}$$

Theorem 1

$$\begin{gathered}\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow(\forall X2.\\ (v1\_xxreal\_0\ X2)\Rightarrow(\neg(\neg(X0 = k1\_xxreal\_0)\wedge(X1 = k1\_xxreal\_0))\wedge\\ ((\neg(X0 = k2\_xxreal\_0)\wedge(X1 = k2\_xxreal\_0))\wedge((\neg(X1 = k1\_xxreal\_0)\wedge\\ (X2 = k1\_xxreal\_0))\wedge((\neg(X1 = k2\_xxreal\_0)\wedge(X2 = k2\_xxreal\_0))\wedge\\ ((\neg(X0 = k1\_xxreal\_0)\wedge(X2 = k2\_xxreal\_0))\wedge((\neg(X0 = k2\_xxreal\_0)\wedge\\ (X2 = k1\_xxreal\_0))\wedge(k1\_xxreal\_3\ (k3\_xxreal\_3\ X0\ X1)\ X2\neq k3\_xxreal\_3\\ X0\ (k3\_xxreal\_3\ X1\ X2)))))))))\end{gathered}$$