t19_xboolean (TMFcwCd5fyL4ySMMB41AUifZqz5J1vK1i2h)

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Let $v1\_xboolean : \iota \Rightarrow o$ be given. Let $k7\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k5\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_0 : \iota$ be given. Let $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k3\_xboolean : \iota \Rightarrow \iota$ be given. Let $k2\_xboolean : \iota$ be given. Let $k1\_xboolean : \iota$ be given. Let $k6\_xboolean : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (\forall X1.(v1\_xboolean\ X1) \Rightarrow (k5\_xboolean\ X0\ (k4\_xboolean\ X0\ X1) = X0)) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (k5\_xboolean\ X0\ X0 = X0) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (k4\_xboolean\ X0\ X0 = X0) \tag{4}$$

Assume the following.

$$v1\_xboole\_0\ np\_\_0 \tag{5}$$

Assume the following.

$$k3\_xcmplx\_0\ np\_\_1\ np\_\_0 = np\_\_0 \tag{6}$$

Assume the following.

$$k3\_xcmplx\_0\ np\_\_0\ np\_\_1 = np\_\_0 \tag{7}$$

Assume the following.

$$k6\_xcmplx\_0\ np\_\_1\ np\_\_0 = np\_\_1 \tag{8}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{9}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (k3\_xboolean\ (k3\_xboolean\ X0) = X0) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean\ X0) \wedge (v1\_xboolean\ X1)) \Rightarrow (v1\_xboolean\ (k7\_xboolean\ X0\ X1)) \tag{11}$$

Assume the following.

$$v1\_xboolean\ k2\_xboolean \tag{12}$$

Assume the following.

$$v1\_xboolean\ k1\_xboolean \tag{13}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (v1\_xboolean\ (k3\_xboolean\ X0)) \tag{14}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (\forall X1.(v1\_xboolean\ X1) \Rightarrow (k7\_xboolean\ X0\ X1 = k4\_xboolean\ (k6\_xboolean\ X0\ X1)\ (k6\_xboolean\ X1\ X0))) \tag{15}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (\forall X1.(v1\_xboolean\ X1) \Rightarrow (k6\_xboolean\ X0\ X1 = k5\_xboolean\ (k3\_xboolean\ X0)\ X1)) \tag{16}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (\forall X1.(v1\_xboolean\ X1) \Rightarrow (k4\_xboolean\ X0\ X1 = k3\_xcmplx\_0\ X0\ X1)) \tag{17}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Rightarrow (k3\_xboolean\ X0 = k6\_xcmplx\_0\ np\_\_1\ X0) \tag{18}$$

Assume the following.

$$\forall X0.(v1\_xboolean\ X0) \Leftrightarrow ((X0 = k1\_xboolean) \vee (X0 = k2\_xboolean)) \tag{19}$$

Assume the following.

$$k2\_xboolean = np\_\_1 \tag{20}$$

Assume the following.

$$k1\_xboolean = k6\_numbers \tag{21}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean\ X0)\wedge(v1\_xboolean\ X1))\Rightarrow(\\ k7\_xboolean\ X0\ X1 = k7\_xboolean\ X1\ X0) \tag{22}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xboolean\ X0)\wedge(v1\_xboolean\ X1))\Rightarrow(\\ k5\_xboolean\ X0\ X1 = k5\_xboolean\ X1\ X0) \tag{23}$$

Theorem 1

$$\forall X0.(v1\_xboolean\ X0)\Rightarrow(\forall X1.(v1\_xboolean\ X1)\Rightarrow(\forall X2.\\ (v1\_xboolean\ X2)\Rightarrow(k7\_xboolean\ (k7\_xboolean\ X0\ X1)\ X2 = k7\_xboolean\\ X0\ (k7\_xboolean\ X1\ X2))))$$