

# t8\_hilbert2

(TMHFJw1c3G5nPBz2ek5EqdRF2Kt9P78E5xb)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_trees\_2 : \iota \Rightarrow o$  be given. Let  $k5\_trees\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_trees\_3 : \iota \Rightarrow o$  be given. Let  $k4\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k11\_trees\_3 : \iota \Rightarrow \iota$  be given. Let  $k2\_funct\_6 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 \\ & X2) \wedge (v1\_finseq\_1 X2))) \Rightarrow ((X2 = k10\_finseq\_1 X0 X1) \Leftrightarrow ((k3\_finseq\_1 \\ & X2 = np\_2) \wedge ((k1\_funct\_1 X2 np\_1 = X0) \wedge (k1\_funct\_1 X2 np\_2 = X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k2\_xcmplx\_0 X0 k6\_numbers = X0) \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & (m2\_subset\_1 np\_0 k1\_numbers k5\_numbers) \wedge ((m1\_subset\_1 np\_0 \\ & k5\_numbers) \wedge (m1\_subset\_1 np\_0 k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$v1\_xboole\_0 \text{ } np\_0 \quad (6)$$

Assume the following.

$$k2\_xcmplx\_0 \text{ } np\_1 \text{ } np\_1 = np\_2 \quad (7)$$

Assume the following.

$$\neg r1\_xxreal\_0 \text{ } np\_2 \text{ } np\_1 \quad (8)$$

Assume the following.

$$\neg r1\_xxreal\_0 \text{ } np\_2 \text{ } np\_0 \quad (9)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (10)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 \text{ } X0 \text{ } k5\_numbers) \wedge (v7\_ordinal1 \text{ } X1)) \Rightarrow (k2\_nat\_1 \text{ } X0 \text{ } X1 = k2\_xcmplx\_0 \text{ } X0 \text{ } X1) \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 \text{ } (k10\_finseq\_1 \text{ } X0 \text{ } X1)) \wedge (v1\_funct\_1 \text{ } (k10\_finseq\_1 \text{ } X0 \text{ } X1)) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. (((v1\_relat\_1 \text{ } X0) \wedge ((v1\_funct\_1 \text{ } X0) \wedge (v3\_trees\_2 \text{ } X0))) \wedge ((v1\_relat\_1 \text{ } X1) \wedge ((v1\_funct\_1 \text{ } X1) \wedge (v3\_trees\_2 \text{ } X1)))) \Rightarrow ((\neg v1\_xboole\_0 \text{ } (k10\_finseq\_1 \text{ } X0 \text{ } X1)) \wedge (v6\_trees\_3 \text{ } (k10\_finseq\_1 \text{ } X0 \text{ } X1))) \quad (14)$$

Assume the following.

$$\forall X0. \forall X1. v1\_finseq\_1 \text{ } (k10\_finseq\_1 \text{ } X0 \text{ } X1) \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v1\_relat\_1 \text{ } X1) \wedge ((v1\_funct\_1 \text{ } X1) \wedge (v3\_trees\_2 \text{ } X1))) \wedge ((v1\_relat\_1 \text{ } X2) \wedge ((v1\_funct\_1 \text{ } X2) \wedge (v3\_trees\_2 \text{ } X2)))) \Rightarrow ((v1\_relat\_1 \text{ } (k6\_trees\_4 \text{ } X0 \text{ } X1 \text{ } X2)) \wedge ((v1\_funct\_1 \text{ } (k6\_trees\_4 \text{ } X0 \text{ } X1 \text{ } X2)) \wedge (v3\_trees\_2 \text{ } (k6\_trees\_4 \text{ } X0 \text{ } X1 \text{ } X2)))) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v3\_trees\_2 \\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 X2)\wedge(v3\_trees\_2 \\ X2)))\Rightarrow(k6\_trees\_4 X0 X1 X2 = k4\_trees\_4 X0 (k10\_finseq\_1 X1 X2))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 \\ X1)))\Rightarrow((v6\_trees\_3 X1)\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 \\ X2)\wedge(v3\_trees\_2 X2)))\Rightarrow((X2 = k4\_trees\_4 X0 X1)\Leftrightarrow((\exists X3.( \\ (v1\_relat\_1 X3)\wedge((v1\_funct\_1 X3)\wedge((v1\_finseq\_1 X3)\wedge(v6\_trees\_3 \\ X3))))\wedge((X1 = X3)\wedge(k9\_xtuple\_0 X2 = k11\_trees\_3 (k2\_funct\_6 X3))))\wedge \\ ((k1\_funct\_1 X2 k1\_xboole\_0 = X0)\wedge(\forall X3.(m1\_subset\_1 X3 \\ k5\_numbers)\Rightarrow((\neg r1\_xreal\_0 (k3\_finseq\_1 X1) X3)\Rightarrow(k5\_trees\_2 \\ X2 (k12\_finseq\_1 k5\_numbers X3) = k1\_funct\_1 X1 (k2\_nat\_1 X3 np\_1)))))))))) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(k2\_nat\_1 X0 X1 = k2\_nat\_1 X1 X0) \quad (19)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (20)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xcmplx\_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (22)$$

### Theorem 1

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v3\_trees\_2 \\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 X2)\wedge(v3\_trees\_2 \\ X2)))\Rightarrow((k5\_trees\_2 (k6\_trees\_4 X0 X1 X2) (k12\_finseq\_1 k5\_numbers \\ k6\_numbers) = X1)\wedge(k5\_trees\_2 (k6\_trees\_4 X0 X1 X2) (k12\_finseq\_1 \\ k5\_numbers np\_1) = X2))) \end{aligned}$$