

# t34\_hilbert2 (TMTYYRcdmWDdCmxKw- DAn9J3qfXmh9iknLZt)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_hilbert1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_hilbert2 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_hilbert2 : \iota \Rightarrow o$  be given. Let  $v2\_hilbert2 : \iota \Rightarrow o$  be given. Let  $v3\_hilbert2 : \iota \Rightarrow o$  be given. Let  $k2\_hilbert1 : \iota$  be given. 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  $k6\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_trees\_4 : \iota \Rightarrow \iota$  be given. Let  $k2\_trees\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v5\_hilbert1 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_hilbert2 : \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_hilbert2 : \iota \Rightarrow \iota$  be given. Let  $v1\_hilbert1 : \iota \Rightarrow o$  be given. Let  $v2\_hilbert1 : \iota \Rightarrow o$  be given. Let  $v3\_hilbert1 : \iota \Rightarrow o$  be given. Let  $v4\_hilbert1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\neg(\neg v1\_hilbert2 X0) \wedge \\ ((\neg v2\_hilbert2 X0) \wedge ((\neg v3\_hilbert2 X0) \wedge (X0 \neq k2\_hilbert1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v3\_trees\_2 \\ X1))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v3\_trees\_2 \\ X2))) \Rightarrow (k1\_funct\_1 (k6\_trees\_4 X0 X1 X2) k1\_xboole\_0 = X0)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(k9\_xtuple\_0 (k1\_trees\_4 X0) = k2\_trees\_1 k6\_numbers) \wedge \\ (k1\_funct\_1 (k1\_trees\_4 X0) k1\_xboole\_0 = X0) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k1\_hilbert1) \Rightarrow (k3\_hilbert2 (k3\_hilbert1 X0 X1) = k6\_trees\_4 \\ (k3\_hilbert1 X0 X1) (k3\_hilbert2 X0) (k3\_hilbert2 X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow (k3\_hilbert2 (k4\_hilbert1 X0 X1) = k6\_trees\_4 (k4\_hilbert1 X0 X1) (k3\_hilbert2 X0) (k3\_hilbert2 X1))) \quad (5)$$

Assume the following.

$$k3\_hilbert2 k2\_hilbert1 = k2\_trees\_4 k1\_hilbert1 k2\_hilbert1 \quad (6)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k2\_trees\_4 X0 X1 = k1\_trees\_4 X1) \quad (8)$$

Assume the following.

$$v5\_hilbert1 k1\_hilbert1 \quad (9)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow ((v1\_relat\_1 (k3\_hilbert2 X0)) \wedge ((v5\_relat\_1 (k3\_hilbert2 X0) k1\_hilbert1) \wedge ((v1\_funct\_1 (k3\_hilbert2 X0)) \wedge (v3\_trees\_2 (k3\_hilbert2 X0)))))) \quad (10)$$

Assume the following.

$$(v1\_relat\_1 k2\_hilbert2) \wedge ((v4\_relat\_1 k2\_hilbert2 k1\_hilbert1) \wedge ((v1\_funct\_1 k2\_hilbert2) \wedge (v1\_partfun1 k2\_hilbert2 k1\_hilbert1))) \quad (11)$$

Assume the following.

$$m1\_subset\_1 k2\_hilbert1 k1\_hilbert1 \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (m1\_subset\_1 (k1\_hilbert2 X0) k1\_hilbert1) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k1\_hilbert1) \wedge ((v1\_funct\_1 X0) \wedge (v1\_partfun1 X0 k1\_hilbert1)))) \Rightarrow ((X0 = k2\_hilbert2) \Leftrightarrow \\ & ((k1\_funct\_1 X0 k2\_hilbert1 = k2\_trees\_4 k1\_hilbert1 k2\_hilbert1) \wedge \\ & ((\forall X1.(m1\_subset\_1 X1 k5\_numbers) \Rightarrow (k1\_funct\_1 X0 (k1\_hilbert2 X1) = k2\_trees\_4 k1\_hilbert1 (k1\_hilbert2 X1))) \wedge (\forall X1.(m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow \\ & (\exists X3.((v1\_relat\_1 X3) \wedge ((v5\_relat\_1 X3 k1\_hilbert1) \wedge (v1\_funct\_1 X3) \wedge (v3\_trees\_2 X3)))) \wedge (\exists X4.((v1\_relat\_1 X4) \wedge ((v5\_relat\_1 X4 k1\_hilbert1) \wedge ((v1\_funct\_1 X4) \wedge (v3\_trees\_2 X4)))) \wedge ((X3 = k1\_funct\_1 X0 X1) \wedge ((X4 = k1\_funct\_1 X0 X2) \wedge ((k1\_funct\_1 X0 (k4\_hilbert1 X1 X2) = k6\_trees\_4 (k4\_hilbert1 X1 X2) X3 X4) \wedge (k1\_funct\_1 X0 (k3\_hilbert1 X1 X2) = k6\_trees\_4 (k3\_hilbert1 X1 X2) X3 X4)))))))))) \quad (14) \end{aligned}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow ((v3\_hilbert2 X0) \Leftrightarrow (\exists X1.(m1\_subset\_1 X1 k5\_numbers) \wedge (X0 = k1\_hilbert2 X1))) \quad (15)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow ((v2\_hilbert2 X0) \Leftrightarrow (\exists X1.(m1\_subset\_1 X1 k1\_hilbert1) \wedge (\exists X2.(m1\_subset\_1 X2 k1\_hilbert1) \wedge (X0 = k3\_hilbert1 X1 X2)))) \quad (16)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow ((v1\_hilbert2 X0) \Leftrightarrow (\exists X1.(m1\_subset\_1 X1 k1\_hilbert1) \wedge (\exists X2.(m1\_subset\_1 X2 k1\_hilbert1) \wedge (X0 = k4\_hilbert1 X1 X2)))) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (k3\_hilbert2 X0 = k1\_funct\_1 k2\_hilbert2 X0) \quad (18)$$

Assume the following.

$$\forall X0.(v5\_hilbert1 X0) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_hilbert1 X0) \wedge ((v2\_hilbert1 X0) \wedge ((v3\_hilbert1 X0) \wedge (v4\_hilbert1 X0)))))) \quad (19)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (k1\_funct\_1 (k3\_hilbert2 X0) k1\_xboole\_0 = X0)$$