

## t33\_hilbert2

(TMabEQaGKr43YmJo6eVTb3omB5uJVRyP1Yj)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_hilbert1 : \iota$  be given. Let  $k3\_hilbert2 : \iota \Rightarrow \iota$  be given. Let  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k2\_hilbert2 : \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_hilbert1 : \iota$  be given. Let  $k2\_trees\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_hilbert2 : \iota \Rightarrow \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_trees\_2 : \iota \Rightarrow o$  be given. Let  $k4\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_hilbert1) \wedge (m1\_subset\_1 X1 k1\_hilbert1)) \Rightarrow (m1\_subset\_1 (k3\_hilbert1 X0 X1) k1\_hilbert1) \quad (1)$$

Assume the following.

$$(v1\_relat\_1 k2\_hilbert2) \wedge ((v4\_relat\_1 k2\_hilbert2 k1\_hilbert1) \wedge (v1\_funct\_1 k2\_hilbert2) \wedge (v1\_partfun1 k2\_hilbert2 k1\_hilbert1)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k1\_hilbert1) \wedge (v1\_funct\_1 X0) \wedge (v1\_partfun1 X0 k1\_hilbert1))) \Rightarrow ((X0 = k2\_hilbert2) \Leftrightarrow \\ & ((k1\_funct\_1 X0 k2\_hilbert1 = k2\_trees\_4 k1\_hilbert1 k2\_hilbert1) \wedge \\ & ((\forall X1. (m1\_subset\_1 X1 k5\_numbers) \Rightarrow (k1\_funct\_1 X0 (k1\_hilbert2 X1) = k2\_trees\_4 k1\_hilbert1 (k1\_hilbert2 X1)))) \wedge (\forall X1. (m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (\exists X3. ((v1\_relat\_1 X3) \wedge ((v5\_relat\_1 X3 k1\_hilbert1) \wedge (v1\_funct\_1 X3) \wedge (v3\_trees\_2 X3)))) \wedge (\exists X4. ((v1\_relat\_1 X4) \wedge ((v5\_relat\_1 X4 k1\_hilbert1) \wedge ((v1\_funct\_1 X4) \wedge (v3\_trees\_2 X4)))))) \wedge ((X3 = k1\_funct\_1 X0 X1) \wedge ((X4 = k1\_funct\_1 X0 X2) \wedge ((k1\_funct\_1 X0 (k4\_hilbert1 X1 X2) = k6\_trees\_4 (k4\_hilbert1 X1 X2) X3 X4) \wedge (k1\_funct\_1 X0 (k3\_hilbert1 X1 X2) = k6\_trees\_4 (k3\_hilbert1 X1 X2) X3 X4)))))))))) \quad (3) \end{aligned}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (k3\_hilbert2 X0 = k1\_funct\_1 k2\_hilbert2 X0) \quad (4)$$

**Theorem 1**

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