

# t34\_hilbert3 (TMcKWQdRcvKUH- hZGxgQSvdBf2MYgpX2QuiS)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  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  $m1\_hilbert3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_hilbert3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_hilbert2 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m2\_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_hilbert3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_hilbert1 : \iota$  be given. Let  $k2\_hilbert3 : \iota \Rightarrow \iota$  be given. Let  $k1\_msualg\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_hilbert1 : \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_hilbert3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_hilbert3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (2)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (3)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v2\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge (v1\_partfun1 X0 k5\_numbers)))))) \wedge \\ & (m1\_hilbert3 X1 X0)) \Rightarrow (m2\_pboole (k4\_hilbert3 X0 X1) k1\_hilbert1 \\ & (k2\_hilbert3 X0) (k2\_hilbert3 X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k5\_numbers) \Rightarrow (m1\_subset\_1 (k1\_hilbert2 X0) k1\_hilbert1) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v2\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge (v1\_partfun1 X0 k5\_numbers)))))) \Rightarrow \\ & (\forall X1. (m1\_hilbert3 X1 X0) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (k5\_hilbert3 X0 X1 X2 = k1\_msualg\_3 k1\_hilbert1 (k2\_hilbert3 X0) \\ & (k2\_hilbert3 X0) (k4\_hilbert3 X0 X1) X2))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v2\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge (v1\_partfun1 X0 k5\_numbers)))))) \Rightarrow \\ & (\forall X1. (m1\_hilbert3 X1 X0) \Rightarrow (\forall X2. (m2\_pboole X2 k1\_hilbert1 (k2\_hilbert3 X0) (k2\_hilbert3 X0)) \Rightarrow ((X2 = k4\_hilbert3 X0 X1) \Leftrightarrow ( \\ & (k1\_msualg\_3 k1\_hilbert1 (k2\_hilbert3 X0) (k2\_hilbert3 X0) X2 k2\_hilbert1 = k6\_partfun1 np\_1) \wedge ((\forall X3. (m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow (k1\_msualg\_3 k1\_hilbert1 (k2\_hilbert3 X0) (k2\_hilbert3 X0) X2 (k1\_hilbert2 X3) = k1\_funct\_1 X1 X3)) \wedge (\forall X3. \\ & (m1\_subset\_1 X3 k1\_hilbert1) \Rightarrow (\forall X4. (m1\_subset\_1 X4 k1\_hilbert1) \Rightarrow (\exists X5. ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 (k3\_hilbert3 X0 X3) (k3\_hilbert3 X0 X3)) \wedge ((v3\_funct\_2 X5 (k3\_hilbert3 X0 X3) (k3\_hilbert3 X0 X3)) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k3\_hilbert3 X0 X3) (k3\_hilbert3 X0 X3)))))) \wedge (\exists X6. ((v1\_funct\_1 X6) \wedge ((v1\_funct\_2 X6 (k3\_hilbert3 X0 X4) (k3\_hilbert3 X0 X4)) \wedge ((v3\_funct\_2 X6 (k3\_hilbert3 X0 X4) (k3\_hilbert3 X0 X4)) \wedge (m1\_subset\_1 X6 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k3\_hilbert3 X0 X4) (k3\_hilbert3 X0 X4)))))) \wedge ((X5 = k1\_msualg\_3 k1\_hilbert1 (k2\_hilbert3 X0) (k2\_hilbert3 X0) X2 X3) \wedge ((X6 = k1\_msualg\_3 k1\_hilbert1 (k2\_hilbert3 X0) (k2\_hilbert3 X0) X2 X4) \wedge ((k1\_msualg\_3 k1\_hilbert1 (k2\_hilbert3 X0) (k2\_hilbert3 X0) X2 (k4\_hilbert1 X3 X4) = k16\_funct\_3 (k3\_hilbert3 X0 X3) (k3\_hilbert3 X0 X4) (k3\_hilbert3 X0 X3) (k3\_hilbert3 X0 X4) X5 X6) \wedge (k1\_msualg\_3 k1\_hilbert1 (k2\_hilbert3 X0) (k2\_hilbert3 X0) X2 (k3\_hilbert1 X3 X4) = k1\_hilbert3 (k3\_hilbert3 X0 X3) (k3\_hilbert3 X0 X4) X5 X6)))))))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (9)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & ((v1\_relat\_1 X1) \wedge ((v2\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge \\ & ((v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 k5\_numbers)))))) \Rightarrow (\forall X2. \\ & (m1\_hilbert3 X2 X1) \Rightarrow (k5\_hilbert3 X1 X2 (k1\_hilbert2 X0) = k1\_funct\_1 \\ & X2 X0))) \end{aligned}$$