

## t45\_hilbert1

(TMbaCQCcxBE8ASjZ7JY1rAU6BeraLphM5xz)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_hilbert1 : \iota$  be given. Let  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_hilbert1 : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v6\_hilbert1 : \iota \Rightarrow o$  be given. Let  $k2\_hilbert1 : \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1. (m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (k3\_hilbert1 (k4\_hilbert1 (k3\_hilbert1 X0 X1) (k4\_hilbert1 X0 X2)) (k4\_hilbert1 X2 X1) \in k6\_hilbert1))) \quad (2)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1. (m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (k3\_hilbert1 (k3\_hilbert1 (k4\_hilbert1 X0 X1) X2) (k3\_hilbert1 X0 (k3\_hilbert1 X1 X2)) \in k6\_hilbert1))) \quad (3)$$

Assume the following.

$$v6\_hilbert1 k6\_hilbert1 \quad (4)$$

Assume the following.

$$m1\_subset\_1 k6\_hilbert1 (k1\_zfmisc\_1 k1\_hilbert1) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_hilbert1) \wedge (m1\_subset\_1 X1 k1\_hilbert1)) \Rightarrow (m1\_subset\_1 (k4\_hilbert1 X0 X1) k1\_hilbert1) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_hilbert1) \wedge (m1\_subset\_1 X1 k1\_hilbert1)) \Rightarrow (m1\_subset\_1 (k3\_hilbert1 X0 X1) k1\_hilbert1) \quad (7)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_hilbert1)) \Rightarrow ((v6\_hilbert1 \\
& X0) \Leftrightarrow ((k2\_hilbert1 \in X0) \wedge (\forall X1.(m1\_subset\_1 X1 k1\_hilbert1) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 k1\_hilbert1) \Rightarrow ((k3\_hilbert1 X1 (k3\_hilbert1 X2 X1) \in X0) \wedge ((k3\_hilbert1 \\
& (k3\_hilbert1 X1 (k3\_hilbert1 X2 X3)) (k3\_hilbert1 (k3\_hilbert1 \\
& X1 X2) (k3\_hilbert1 X1 X3)) \in X0) \wedge ((k3\_hilbert1 (k4\_hilbert1 X1 \\
& X2) X1 \in X0) \wedge ((k3\_hilbert1 (k4\_hilbert1 X1 X2) X2 \in X0) \wedge ((k3\_hilbert1 \\
& X1 (k3\_hilbert1 X2 (k4\_hilbert1 X1 X2)) \in X0) \wedge (((X1 \in X0) \wedge (k3\_hilbert1 \\
& X1 X2 \in X0)) \Rightarrow (X2 \in X0))))))))))))) \\
& \tag{8}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_hilbert1) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k1\_hilbert1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_hilbert1) \Rightarrow (k3\_hilbert1 \\
& (k3\_hilbert1 X0 X1) (k3\_hilbert1 (k4\_hilbert1 X0 X2) (k4\_hilbert1 \\
& X2 X1)) \in k6\_hilbert1)))
\end{aligned}$$