

t31\_hilbert1  
(TMHUFYoShnmSsRpsRgc2Rjr5yzR7PtnCMwg)

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Let  $m1\_subset.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_hilbert1 : \iota$  be given. Let  $k4\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_hilbert1 : \iota$  be given. Let  $v6\_hilbert1 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc.1 : \iota \Rightarrow \iota$  be given. Let  $k3\_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_hilbert1 : \iota$  be given. Assume the following.

$$v6\_hilbert1 \ k6\_hilbert1 \tag{1}$$

Assume the following.

$$m1\_subset.1 \ k6\_hilbert1 \ (k1\_zfmisc.1 \ k1\_hilbert1) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset.1 \ X0 \ k1\_hilbert1) \wedge (m1\_subset.1 \ X1 \ k1\_hilbert1)) \Rightarrow (m1\_subset.1 \ (k4\_hilbert1 \ X0 \ X1) \ k1\_hilbert1) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset.1 \ X0 \ k1\_hilbert1) \wedge (m1\_subset.1 \ X1 \ k1\_hilbert1)) \Rightarrow (m1\_subset.1 \ (k3\_hilbert1 \ X0 \ X1) \ k1\_hilbert1) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset.1 \ X0 \ (k1\_zfmisc.1 \ k1\_hilbert1)) \Rightarrow ((v6\_hilbert1 \ X0) \Leftrightarrow ((k2\_hilbert1 \in X0) \wedge (\forall X1. (m1\_subset.1 \ X1 \ k1\_hilbert1) \Rightarrow \\ & (\forall X2. (m1\_subset.1 \ X2 \ k1\_hilbert1) \Rightarrow (\forall X3. (m1\_subset.1 \ X3 \ k1\_hilbert1) \Rightarrow ((k3\_hilbert1 \ X1 \ (k3\_hilbert1 \ X2 \ X1) \in X0) \wedge ((k3\_hilbert1 \\ & (k3\_hilbert1 \ X1 \ (k3\_hilbert1 \ X2 \ X3)) \ (k3\_hilbert1 \ (k3\_hilbert1 \ X1 \ X2) \ (k3\_hilbert1 \ X1 \ X3)) \in X0) \wedge ((k3\_hilbert1 \ (k4\_hilbert1 \ X1 \ X2) \ X1 \in X0) \wedge ((k3\_hilbert1 \ (k4\_hilbert1 \ X1 \ X2) \ X2 \in X0) \wedge ((k3\_hilbert1 \ X1 \ (k3\_hilbert1 \ X2 \ (k4\_hilbert1 \ X1 \ X2)) \in X0) \wedge (((X1 \in X0) \wedge (k3\_hilbert1 \ X1 \ X2 \in X0)) \Rightarrow (X2 \in X0))))))))))))) \end{aligned} \tag{5}$$

**Theorem 1**

$$\forall X0. (m1\_subset.1 \ X0 \ k1\_hilbert1) \Rightarrow (\forall X1. (m1\_subset.1 \ X1 \ k1\_hilbert1) \Rightarrow ((k4\_hilbert1 \ X0 \ X1 \in k6\_hilbert1) \Leftrightarrow ((X0 \in k6\_hilbert1) \wedge (X1 \in k6\_hilbert1))))$$