

t44_hilbert3

(TMJDzpbHVD3sv1e3YD5XdUApp6wbeNFGWLm1)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_hilbert1 : \iota$ 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 $k5_numbers : \iota$ 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 $r1_abian : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_hilbert3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_hilbert3 : \iota \Rightarrow o$ be given. Let $k3_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funcop_1 : \iota \Rightarrow o$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $k3_hilbert3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1_subset_1 X0 k1_hilbert1) \Rightarrow (\forall X1.(m1_subset_1 \\
 & \quad X1 k1_hilbert1) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v2_relat_1 X2) \wedge \\
 & \quad ((v4_relat_1 X2 k5_numbers) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 \\
 & \quad k5_numbers)))))) \Rightarrow (\forall X3.(m1_hilbert3 X3 X2) \Rightarrow (\forall X4. \\
 & \quad (r1_abian X4 (k5_hilbert3 X2 X3 X0)) \Rightarrow (\forall X5.((v1_relat_1 \\
 & \quad X5) \wedge (v1_funct_1 X5)) \Rightarrow ((r1_abian X5 (k5_hilbert3 X2 X3 (k3_hilbert1 \\
 & \quad X0 X1))) \Rightarrow (r1_abian (k1_funct_1 X5 X4) (k5_hilbert3 X2 X3 X1)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_funcop_1 X0))) \Rightarrow ((v1_relat_1 (k1_funct_1 X0 X1)) \wedge (v1_funct_1 (k1_funct_1 X0 X1))) \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.\forall X1.\forall X2.(((v1_relat_1 X0) \wedge ((v2_relat_1 \\
 & \quad X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\
 & \quad X0 k5_numbers)))))) \wedge ((m1_subset_1 X1 k1_hilbert1) \wedge (m1_subset_1 \\
 & \quad X2 k1_hilbert1))) \Rightarrow (v4_funct_1 (k3_hilbert3 X0 (k3_hilbert1 X1 \\
 & \quad X2)))
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1_relat_1 X0) \wedge ((v2_relat_1 \\ & X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 \\ & X0 k5_numbers)))))) \wedge ((m1_hilbert3 X1 X0) \wedge (m1_subset_1 X2 k1_hilbert1))) \Rightarrow \\ & ((v1_funct_1 (k5_hilbert3 X0 X1 X2)) \wedge ((v1_funct_2 (k5_hilbert3 \\ & X0 X1 X2) (k3_hilbert3 X0 X2) (k3_hilbert3 X0 X2)) \wedge (m1_subset_1 \\ & (k5_hilbert3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k3_hilbert3 \\ & X0 X2) (k3_hilbert3 X0 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k1_hilbert1) \wedge (m1_subset_1 X1 k1_hilbert1)) \Rightarrow (m1_subset_1 (k3_hilbert1 X0 X1) k1_hilbert1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 k1_hilbert1) \Rightarrow ((v2_hilbert3 X0) \Leftrightarrow (\\ & \forall X1. ((v1_relat_1 X1) \wedge ((v2_relat_1 X1) \wedge ((v4_relat_1 X1 \\ & k5_numbers) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 k5_numbers)))))) \Rightarrow \\ & (\forall X2. (m1_hilbert3 X2 X1) \Rightarrow (\exists X3. r1_abian X3 (k5_hilbert3 \\ & X1 X2 X0)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((r1_abian X0 X1) \Leftrightarrow ((X0 \in k9_xtuple_0 X1) \wedge (X0 = k1_funct_1 X1 X0))) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow ((v4_relat_1 X2 X0) \wedge (v5_relat_1 X2 X1)) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (9)$$

Assume the following.

$$\forall X0. (v4_funct_1 X0) \Rightarrow (\forall X1. ((v1_relat_1 X1) \wedge ((v5_relat_1 X1 X0) \wedge (v1_funct_1 X1))) \Rightarrow ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_funcop_1 X1)))) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 k1_hilbert1) \Rightarrow (\forall X1. (m1_subset_1 \\ & X1 k1_hilbert1) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v2_relat_1 X2) \wedge \\ & ((v4_relat_1 X2 k5_numbers) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 \\ & k5_numbers)))))) \Rightarrow (\forall X3. (m1_hilbert3 X3 X2) \Rightarrow (\neg(\exists X4. \\ & r1_abian X4 (k5_hilbert3 X2 X3 X0)) \wedge ((\forall X4. \neg r1_abian X4 (\\ & k5_hilbert3 X2 X3 X1)) \wedge (v2_hilbert3 (k3_hilbert1 X0 X1)))))) \end{aligned}$$