

t32_hilbert3

(TMcZscuo6F5bvqD4USetWFR6PdTD61kfHBs)

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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 $k3_hilbert3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_hilbert3 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_hilbert1 : \iota$ be given. Let $np_1 : \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k1_hilbert2 : \iota \Rightarrow \iota$ be given. Let $k4_hilbert1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (k9_funct_2 X0 X1 = k1_funct_2 X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 X0 k5_numbers)))))) \wedge (m1_subset_1 X1 k1_hilbert1)) \Rightarrow (\neg v1_xboole_0 (k3_hilbert3 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k1_hilbert1) \wedge (m1_subset_1 X1 k1_hilbert1)) \Rightarrow (m1_subset_1 (k3_hilbert1 X0 X1) k1_hilbert1) \quad (3)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 X0 k5_numbers)))))) \Rightarrow ((v1_relat_1 (k2_hilbert3 X0)) \wedge ((v4_relat_1 (k2_hilbert3 X0) k1_hilbert1) \wedge ((v1_funct_1 (k2_hilbert3 X0)) \wedge (v1_partfun1 (k2_hilbert3 X0) k1_hilbert1)))) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge ((v4_relat_1 X0 \\ & k5_numbers) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 X0 k5_numbers)))))) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 k1_hilbert1) \Rightarrow (k3_hilbert3 X0 X1 = \\ & k1_funct_1 (k2_hilbert3 X0) X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v2_relat_1 X0) \wedge ((v4_relat_1 X0 \\ & k5_numbers) \wedge ((v1_funct_1 X0) \wedge (v1_partfun1 X0 k5_numbers)))))) \Rightarrow \\ & (\forall X1.((v1_relat_1 X1) \wedge ((v4_relat_1 X1 k1_hilbert1) \wedge (\\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 k1_hilbert1)))))) \Rightarrow ((X1 = k2_hilbert3 \\ & X0) \Leftrightarrow ((k1_funct_1 X1 k2_hilbert1 = np_1) \wedge ((\forall X2.(m2_subset_1 \\ & X2 k1_numbers k5_numbers) \Rightarrow (k1_funct_1 X1 (k1_hilbert2 X2) = k1_funct_1 \\ & X0 X2)) \wedge (\forall X2.(m1_subset_1 X2 k1_hilbert1) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 k1_hilbert1) \Rightarrow ((k1_funct_1 X1 (k4_hilbert1 X2 \\ & X3) = k2_zfmisc_1 (k1_funct_1 X1 X2) (k1_funct_1 X1 X3)) \wedge (k1_funct_1 \\ & X1 (k3_hilbert1 X2 X3) = k1_funct_2 (k1_funct_1 X1 X2) (k1_funct_1 \\ & X1 X3)))))))))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_hilbert1) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_hilbert1) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v2_relat_1 X2) \wedge \\ & ((v4_relat_1 X2 k5_numbers) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 \\ & k5_numbers)))))) \Rightarrow (k3_hilbert3 X2 (k3_hilbert1 X0 X1) = k9_funct_2 \\ & (k3_hilbert3 X2 X0) (k3_hilbert3 X2 X1)))) \end{aligned}$$