

t4_hilbasis (TMRrCohwGFrXisQD- jVFVUiLn22TCrHLqQB7)

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Let $v1_relat_1 : \iota \Rightarrow o$ 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 $v4_valued_0 : \iota \Rightarrow o$ be given. Let $v2_pre_poly : \iota \Rightarrow o$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_pre_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((X0 \in X1) \Rightarrow (k1_funct_1 (k5_relat_1 X2 X1) X0 = k1_funct_1 X2 X0)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0) \wedge ((v4_valued_0 X1) \wedge (v2_pre_poly X1)))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge (v1_funct_1 X2) \wedge (v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly X2)))) \Rightarrow ((\forall X3. (X3 \in X0) \Rightarrow (r1_xxreal_0 (k1_funct_1 X1 X3) (k1_funct_1 X2 X3))) \Rightarrow (r3_pre_poly X0 X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0) \wedge ((v4_valued_0 X1) \wedge (v2_pre_poly X1)))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge (v1_funct_1 X2) \wedge (v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly X2)))) \Rightarrow ((r3_pre_poly X0 X1 X2) \Leftrightarrow (\forall X3. r1_xxreal_0 (k1_funct_1 X1 X3) (k1_funct_1 X2 X3)))) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 \\ & X2 X1)\wedge((v1_funct_1 X2)\wedge((v1_partfun1 X2 X1)\wedge((v4_valued_0 X2)\wedge \\ & (v2_pre_poly X2))))))\Rightarrow(\forall X3.((v1_relat_1 X3)\wedge((v4_relat_1 \\ & X3 X1)\wedge((v1_funct_1 X3)\wedge((v1_partfun1 X3 X1)\wedge((v4_valued_0 X3)\wedge \\ & (v2_pre_poly X3))))))\Rightarrow(\forall X4.((v1_relat_1 X4)\wedge((v4_relat_1 \\ & X4 X0)\wedge((v1_funct_1 X4)\wedge((v1_partfun1 X4 X0)\wedge((v4_valued_0 X4)\wedge \\ & (v2_pre_poly X4))))))\Rightarrow(\forall X5.((v1_relat_1 X5)\wedge((v4_relat_1 \\ & X5 X0)\wedge((v1_funct_1 X5)\wedge((v1_partfun1 X5 X0)\wedge((v4_valued_0 X5)\wedge \\ & (v2_pre_poly X5))))))\Rightarrow(((X4 = k5_relat_1 X2 X0)\wedge((X5 = k5_relat_1 \\ & X3 X0)\wedge(r3_pre_poly X1 X2 X3))\Rightarrow(r3_pre_poly X0 X4 X5)))) \end{aligned}$$