

t9_groeb_2

(TMJKr3Co5rk2wJGGadeXYeGYnSnygqSEYmg)

October 27, 2020

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 $r3_pre_poly : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_groeb_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_valued_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 X1) \wedge (v2_pre_poly \\ & X1)))))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge \\ & (v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly \\ & X2)))))) \Rightarrow (\forall X3. ((v1_relat_1 X3) \wedge ((v4_relat_1 X3 X0) \wedge \\ & (v1_funct_1 X3) \wedge ((v1_partfun1 X3 X0) \wedge ((v4_valued_0 X3) \wedge (v2_pre_poly \\ & X3)))))) \Rightarrow (((r3_pre_poly X0 X1 X3) \wedge (r3_pre_poly X0 X2 X3)) \Rightarrow (r3_pre_poly \\ & X0 (k2_groeb_2 X0 X1 X2) X3))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge \\ & (v1_funct_1 X1) \wedge ((v1_partfun1 X1 X0) \wedge ((v4_valued_0 X1) \wedge (v2_pre_poly \\ & X1)))))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v4_relat_1 X2 X0) \wedge \\ & (v1_funct_1 X2) \wedge ((v1_partfun1 X2 X0) \wedge ((v4_valued_0 X2) \wedge (v2_pre_poly \\ & X2)))))) \Rightarrow ((r3_pre_poly X0 X1 (k2_groeb_2 X0 X1 X2)) \wedge (r3_pre_poly \\ & X0 X2 (k2_groeb_2 X0 X1 X2))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (r1_xxreal_0 X0 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v2_valued_0 \\ & X0))) \Rightarrow (v1_xxreal_0 (k1_funct_1 X0 X1)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((v1_relat_1 X1)\wedge((v4_relat_1 \\
& X1 X0)\wedge((v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_valued_0 X1)\wedge \\
& (v2_pre_poly X1))))))\wedge((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge \\
& ((v1_funct_1 X2)\wedge((v1_partfun1 X2 X0)\wedge((v4_valued_0 X2)\wedge(v2_pre_poly \\
& X2))))))\Rightarrow((v1_relat_1 (k2_groeb_2 X0 X1 X2))\wedge((v4_relat_1 (\\
& k2_groeb_2 X0 X1 X2) X0)\wedge((v1_funct_1 (k2_groeb_2 X0 X1 X2))\wedge((\\
& v1_partfun1 (k2_groeb_2 X0 X1 X2) X0)\wedge((v4_valued_0 (k2_groeb_2 \\
& X0 X1 X2))\wedge(v2_pre_poly (k2_groeb_2 X0 X1 X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\
& (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_valued_0 X1)\wedge(v2_pre_poly \\
& X1))))))\Rightarrow(\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge(\\
& (v1_funct_1 X2)\wedge((v1_partfun1 X2 X0)\wedge((v4_valued_0 X2)\wedge(v2_pre_poly \\
& X2))))))\Rightarrow((r3_pre_poly X0 X1 X2)\Leftrightarrow(\forall X3.r1_xxreal_0 (k1_funct_1 \\
& X1 X3) (k1_funct_1 X2 X3))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v4_valued_0 X0))\Rightarrow((v1_relat_1 X0)\wedge(v3_valued_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v3_valued_0 X0))\Rightarrow((v1_relat_1 X0)\wedge(v2_valued_0 X0)) \tag{8}$$

Theorem 1

$$\begin{aligned}
& \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v4_relat_1 X1 X0)\wedge(\\
& (v1_funct_1 X1)\wedge((v1_partfun1 X1 X0)\wedge((v4_valued_0 X1)\wedge(v2_pre_poly \\
& X1))))))\Rightarrow(\forall X2.((v1_relat_1 X2)\wedge((v4_relat_1 X2 X0)\wedge(\\
& (v1_funct_1 X2)\wedge((v1_partfun1 X2 X0)\wedge((v4_valued_0 X2)\wedge(v2_pre_poly \\
& X2))))))\Rightarrow(\forall X3.((v1_relat_1 X3)\wedge((v4_relat_1 X3 X0)\wedge(\\
& (v1_funct_1 X3)\wedge((v1_partfun1 X3 X0)\wedge((v4_valued_0 X3)\wedge(v2_pre_poly \\
& X3))))))\Rightarrow((r3_pre_poly X0 (k2_groeb_2 X0 X2 X1) (k2_groeb_2 X0 \\
& X2 X3))\Rightarrow(r3_pre_poly X0 (k2_groeb_2 X0 X1 X3) (k2_groeb_2 X0 X2 X3))))
\end{aligned}$$