

t17_rfunct_1

(TMYuqSjRPMHQwkfaS49U7oVr9nDEfCirYJV)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k24_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1_xcmplx_0 X0) \wedge ((v1_xcmplx_0 X1) \wedge (v1_xcmplx_0 X2))) \Rightarrow (k3_xcmplx_0 (k3_xcmplx_0 X0 X1) X2 = k3_xcmplx_0 X0 (k3_xcmplx_0 X1 X2)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow (v1_xcmplx_0 (k1_funct_1 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \wedge (v1_xcmplx_0 X1)) \Rightarrow ((v1_relat_1 (k24_valued_1 X0 X1)) \wedge ((v1_funct_1 (k24_valued_1 X0 X1)) \wedge (v1_valued_0 (k24_valued_1 X0 X1)))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (v1_xcmplx_0 (k3_xcmplx_0 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \wedge (v1_xcmplx_0 X1)) \Rightarrow ((v1_relat_1 (k24_valued_1 X0 X1)) \wedge (v1_funct_1 (k24_valued_1 X0 X1))) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ & (\forall X1.(v1_xcmplx_0 X1) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow ((X2 = k24_valued_1 X0 X1) \Leftrightarrow ((k9_xtuple_0 X2 = k9_xtuple_0 \\ & X0) \wedge (\forall X3.(X3 \in k9_xtuple_0 X2) \Rightarrow (k1_funct_1 X2 X3 = k3_xcmplx_0 \\ & X1 (k1_funct_1 X0 X3))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (k3_xcmplx_0 X0 X1 = k3_xcmplx_0 X1 X0) \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_valued_0 X0))) \Rightarrow \\ & (\forall X1.(v1_xcmplx_0 X1) \Rightarrow (\forall X2.(v1_xcmplx_0 X2) \Rightarrow (k24_valued_1 X0 (k3_xcmplx_0 X1 X2) = k24_valued_1 (k24_valued_1 \\ & X0 X2) X1))) \end{aligned}$$