l6_yellow17 (TMN83hEGrGMNmSv7WmbqtCPTYS3rVHeimQt)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_card\_3 : \iota \Rightarrow \iota$ be given. Let $k2\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12\_card\_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.\forall X2.\ \forall X3.(X2 \neq X3) \Rightarrow (k1\_funct\_1\ (k2\_funct\_7\ X0\ X2\ X1)\ X3 = k1\_funct\_1\ X0\ X3)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k2\_funct\_7\ X0\ X1\ X2)) \wedge (v1\_funct\_1\ (k2\_funct\_7\ X0\ X1\ X2))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k12\_card\_3\ X0\ X1)) \wedge (v1\_funct\_1\ (k12\_card\_3\ X0\ X1))) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.\forall X2.\ (X2 = k8\_relat\_1\ X0\ X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 \in k9\_xtuple\_0\ X0) \wedge (k1\_funct\_1\ X0\ X3 \in X1)))) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow (\forall X1.\forall X2.\ ((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((X2 = k12\_card\_3\ X0\ X1) \Leftrightarrow ((k9\_xtuple\_0\ X2 = k4\_card\_3\ X0) \wedge (\forall X3.((v1\_relat\_1\ X3) \wedge (v1\_funct\_1\ X3)) \Rightarrow ((X3 \in k9\_xtuple\_0\ X2) \Rightarrow (k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X3\ X1)))))) \tag{5}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.\forall X3.\forall X4.\forall X5.(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k1\_funct\_1\ X0\ X3)))\Rightarrow(((X1\in k4\_card\_3\ X0)\wedge(k2\_funct\_7\ X1\ X2\ X4\in k8\_relat\_1\ (k12\_card\_3\ X0\ X3)\ X5))\Rightarrow((X2=X3)\vee(X1\in k8\_relat\_1\ (k12\_card\_3\ X0\ X3)\ X5)))))$$