t62_card_1 (TMGDvQWaNgqd-DQjqTLZwJVoPyHFojyA266Y)

October 27, 2020

Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k1\_card\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $r2\_wellord2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_funct\_1 : \iota \Rightarrow o$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.(r2\_wellord2\ X0\ X1) \Leftrightarrow (k1\_card\_1\ X0 = k1\_card\_1\ X1) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4\_tarski\ X0\ X1 = k4\_tarski\ X2\ X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((k4\_tarski\ X0\ X1 \in X2) \Leftrightarrow ((X0 \in k9\_xtuple\_0\ X2) \wedge (X1 = k1\_funct\_1\ X2\ X0))) \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.(r2\_wellord2\ X0\ X1) \Leftrightarrow (\exists X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \wedge ((v2\_funct\_1\ X2) \wedge ((k9\_xtuple\_0\ X2 = X0) \wedge (k10\_xtuple\_0\ X2 = X1)))) \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v2\_funct\_1\ X0) \Leftrightarrow (\forall X1.\forall X2.((X1 \in k9\_xtuple\_0\ X0) \wedge ((X2 \in k9\_xtuple\_0\ X0) \wedge (k1\_funct\_1\ X0\ X1 = k1\_funct\_1\ X0\ X2))) \Rightarrow (X1 = X2))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2.(X2 \in X0)\Rightarrow (X2 \in X1)) \tag{7}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Rightarrow(\forall X1.(r1\_tarski\ X0\ X1)\Leftrightarrow(\forall X2. \forall X3.(k4\_tarski\ X2\ X3 \in X0)\Rightarrow(k4\_tarski\ X2\ X3 \in X1))) \tag{8}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.(X1 = k10\_xtuple\_0\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(\exists X3.(X3 \in k9\_xtuple\_0\ X0)\wedge(X2 = k1\_funct\_1\ X0\ X3)))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(X0 = X1)\Leftrightarrow((r1\_tarski\ X0\ X1)\wedge(r1\_tarski\ X1\ X0)) \tag{10}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(k1\_card\_1\ X0 = k1\_card\_1\ (k9\_xtuple\_0\ X0))$$