t18_armstrng (TMRgQujaB6k1hmwpyyUxAUubsAfXavJzoXo)

October 27, 2020

Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_setfam\_1 : \iota \Rightarrow \iota$ be given. Let $v8\_relat\_2 : \iota \Rightarrow o$ be given. Let $k6\_armstrng : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_setfam\_1\ X0)\ (k9\_setfam\_1\ X0)))) \Rightarrow (\neg(X1 \in X2) \wedge (\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ X0)) \Rightarrow (X1 \neq k4\_tarski\ X3\ X4)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(k4\_tarski\ X0\ X1 \in k2\_zfmisc\_1\ X2\ X3) \Leftrightarrow ((X0 \in X2) \wedge (X1 \in X3)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2)) \wedge (v1\_xboole\_0\ X2)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{6}$$

Assume the following.

$$\forall X0.k9\_setfam\_1\ X0 = k1\_zfmisc\_1\ X0 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)))\Rightarrow(k6\_armstrng\ X0\ X1\ X2 = k4\_tarski\ X1\ X2) \tag{8}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Rightarrow((v8\_relat\_2\ X0)\Leftrightarrow(\forall X1.\forall X2.\forall X3.((k4\_tarski\ X1\ X2 \in X0)\wedge(k4\_tarski\ X2\ X3 \in X0))\Rightarrow(k4\_tarski\ X1\ X3 \in X0))) \tag{9}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Leftrightarrow(\forall X1.\neg(X1 \in X0)\wedge(\forall X2.\forall X3.X1 \neq k4\_tarski\ X2\ X3)) \tag{10}$$

Theorem 1

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k9\_setfam\_1\ X0)\ (k9\_setfam\_1\ X0))))\Rightarrow((v8\_relat\_2\ X1)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ X0))\Rightarrow(((k6\_armstrng\ X0\ X2\ X3 \in X1)\wedge(k6\_armstrng\ X0\ X3\ X4 \in X1))\Rightarrow(k6\_armstrng\ X0\ X2\ X4 \in X1))))))$$