t4_tsep_2 (TM-RdYF4zWg3Vme79vHdsthEgU7uVguEKBnN)

October 27, 2020

Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_tsep\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l1\_struct\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ (k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1) = k2\_struct\_0\ X0)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)) \Rightarrow ((r1\_xboole\_0\ X1\ X2) \Leftrightarrow (r1\_tarski\ X1\ (k3\_subset\_1\ X0\ X2)))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.r1\_tarski\ X0\ X0 \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k3\_subset\_1\ X0\ (k3\_subset\_1\ X0\ X1) = X1) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0) \Rightarrow (k2\_struct\_0\ X0 = u1\_struct\_0\ X0) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((r1\_tsep\_2\ X0\ X1\ X2) \Leftrightarrow ((r1\_xboole\_0\ X1\ X2) \wedge (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2 = u1\_struct\_0\ X0))))) \tag{6}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\forall X1.\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.\ (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(((X1 = k3\_subset\_1\ (u1\_struct\_0\ X0)\ X2)\vee(X2 = k3\_subset\_1\ (u1\_struct\_0\ X0)\ X1))\Rightarrow(\ r1\_tsep\_2\ X0\ X1\ X2))))$$