t56_tsep_1 (TM-RmL71o4yLVfzQ3xYWXWVHBuW59HFQy4th)

October 27, 2020

Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_pre\_topc : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ 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 $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_tsep\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.\ (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((r2\_tsep\_1\ X0\ X1\ X2) \Leftrightarrow (\exists X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \wedge (\exists X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \wedge (\exists X5.(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \wedge ((r1\_tarski\ (k9\_subset\_1\ (u1\_struct\_0\ X0)\ X3\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2))\ X1) \wedge ((r1\_tarski\ (k9\_subset\_1\ (u1\_struct\_0\ X0)\ X4\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2))\ X2) \wedge ((r1\_tarski\ (k9\_subset\_1\ (u1\_struct\_0\ X0)\ X5\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2))\ (k9\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2)) \wedge ((u1\_struct\_0\ X0 = k4\_subset\_1\ (u1\_struct\_0\ X0)\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X3\ X4)\ X5) \wedge ((v4\_pre\_topc\ X3\ X0) \wedge ((v4\_pre\_topc\ X4\ X0) \wedge (v3\_pre\_topc\ X5\ X0))))))))))))) \tag{1}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1) \Rightarrow (k3\_xboole\_0\ X0\ X1 = X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k9\_subset\_1\ X0\ X1\ X2 = k3\_xboole\_0\ X1\ X2) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)))\Rightarrow(m1\_subset\_1\ (k4\_subset\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ X0)) \tag{5}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2 = u1\_struct\_0\ X0)\Rightarrow((r2\_tsep\_1\ X0\ X1\ X2)\Leftrightarrow(\exists X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge(\exists X4.(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge(\exists X5.(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge((k4\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2 = k4\_subset\_1\ (u1\_struct\_0\ X0)\ (k4\_subset\_1\ (u1\_struct\_0\ X0)\ X3\ X4)\ X5)\wedge((r1\_tarski\ X3\ X1)\wedge((r1\_tarski\ X4\ X2)\wedge((r1\_tarski\ X5\ (k9\_subset\_1\ (u1\_struct\_0\ X0)\ X1\ X2))\wedge((v4\_pre\_topc\ X3\ X0)\wedge((v4\_pre\_topc\ X4\ X0)\wedge(v3\_pre\_topc\ X5\ X0))))))))))))))$$