t59_ens_1 (TMTXWkugHvH-szh7aZRHEDCY4WRTcWe9BheC)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_cat\_1 : \iota \Rightarrow o$ be given. Let $v3\_cat\_1 : \iota \Rightarrow o$ be given. Let $v4\_cat\_1 : \iota \Rightarrow o$ be given. Let $v5\_cat\_1 : \iota \Rightarrow o$ be given. Let $v6\_cat\_1 : \iota \Rightarrow o$ be given. Let $l1\_cat\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k16\_ens\_1 : \iota \Rightarrow \iota$ be given. Let $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11\_ens\_1 : \iota \Rightarrow \iota$ be given. Let $k23\_ens\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_cat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_graph\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_graph\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17\_ens\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_ens\_1 : \iota \Rightarrow \iota$ be given. Let $l5\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_graph\_1 : \iota \Rightarrow o$ be given. Let $k19\_ens\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0) \wedge (((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ X0\ X1) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))) \wedge (m1\_subset\_1\ X3\ X0))) \Rightarrow (k3\_funct\_2\ X0\ X1\ X2\ X3 = k1\_funct\_1\ X2\ X3) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((\neg v11\_struct\_0\ X1) \wedge ((v2\_cat\_1\ X1) \wedge ((v3\_cat\_1\ X1) \wedge ((v4\_cat\_1\ X1) \wedge ((v5\_cat\_1\ X1) \wedge ((v6\_cat\_1\ X1) \wedge (l1\_cat\_1\ X1)))))))) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u4\_struct\_0\ X1)\ (k2\_ens\_1\ (k16\_ens\_1\ X1))) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X1)\ (k2\_ens\_1\ (k16\_ens\_1\ X1))))))) \Rightarrow ((r1\_tarski\ (k16\_ens\_1\ X1)\ X0) \Rightarrow ((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u4\_struct\_0\ X1)\ (u4\_struct\_0\ (k11\_ens\_1\ X0))) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X1)\ (u4\_struct\_0\ (k11\_ens\_1\ X0))))))))))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v11\_struct\_0\ X0)\wedge(l5\_struct\_0\ X0))\Rightarrow(\neg v1\_xboole\_0\ (u4\_struct\_0\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_graph\_1\ X0)\Rightarrow(l5\_struct\_0\ X0) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_cat\_1\ X0)\Rightarrow(l1\_graph\_1\ X0) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0)))))))\wedge(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)))\Rightarrow((v1\_funct\_1\ (k19\_ens\_1\ X0\ X1))\wedge((v1\_funct\_2\ (k19\_ens\_1\ X0\ X1)\ (u4\_struct\_0\ X0)\ (k2\_ens\_1\ (k16\_ens\_1\ X0)))\wedge(m1\_subset\_1\ (k19\_ens\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k2\_ens\_1\ (k16\_ens\_1\ X0))))))) \tag{6}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge((v2\_cat\_1\ X1)\wedge((v3\_cat\_1\ X1)\wedge((v4\_cat\_1\ X1)\wedge((v5\_cat\_1\ X1)\wedge((v6\_cat\_1\ X1)\wedge(l1\_cat\_1\ X1)))))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X1))\Rightarrow((r1\_tarski\ (k16\_ens\_1\ X1)\ X0)\Rightarrow(k23\_ens\_1\ X0\ X1\ X2 = k19\_ens\_1\ X1\ X2)))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge((v2\_cat\_1\ X0)\wedge((v3\_cat\_1\ X0)\wedge((v4\_cat\_1\ X0)\wedge((v5\_cat\_1\ X0)\wedge((v6\_cat\_1\ X0)\wedge(l1\_cat\_1\ X0)))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u4\_struct\_0\ X0)\ (k2\_ens\_1\ (k16\_ens\_1\ X0)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u4\_struct\_0\ X0)\ (k2\_ens\_1\ (k16\_ens\_1\ X0)))))))\Rightarrow((X2 = k19\_ens\_1\ X0\ X1)\Leftrightarrow(\forall X3.(m1\_subset\_1\ X3\ (u4\_struct\_0\ X0))\Rightarrow(k3\_funct\_2\ (u4\_struct\_0\ X0)\ (k2\_ens\_1\ (k16\_ens\_1\ X0))\ X2\ X3 = k1\_domain\_1\ (k2\_zfmisc\_1\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X0))\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X0)))\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_cat\_1\ X0\ X1\ (k3\_graph\_1\ X0\ X3))\ (k2\_cat\_1\ X0\ X1\ (k4\_graph\_1\ X0\ X3))))\ (k1\_domain\_1\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X0))\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X0)))\ (k2\_cat\_1\ X0\ X1\ (k3\_graph\_1\ X0\ X3))\ (k2\_cat\_1\ X0\ X1\ (k4\_graph\_1\ X0\ X3)))\ (k17\_ens\_1\ X0\ X1\ X3)))))) \tag{8}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((\neg v11\_struct\_0\ X1)\wedge((v2\_cat\_1\ X1)\wedge((v3\_cat\_1\ X1)\wedge((v4\_cat\_1\ X1)\wedge((v5\_cat\_1\ X1)\wedge((v6\_cat\_1\ X1)\wedge(l1\_cat\_1\ X1))))))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X1))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u4\_struct\_0\ X1))\Rightarrow((r1\_tarski\ (k16\_ens\_1\ X1)\ X0)\Rightarrow(k3\_funct\_2\ (u4\_struct\_0\ X1)\ (u4\_struct\_0\ (k11\_ens\_1\ X0))\ (k23\_ens\_1\ X0\ X1\ X2)\ X3 = k1\_domain\_1\ (k2\_zfmisc\_1\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X1))\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X1)))\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_cat\_1\ X1\ X2\ (k3\_graph\_1\ X1\ X3))\ (k2\_cat\_1\ X1\ X2\ (k4\_graph\_1\ X1\ X3))))\ (k1\_domain\_1\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X1))\ (k1\_zfmisc\_1\ (u4\_struct\_0\ X1))\ (k2\_cat\_1\ X1\ X2\ (k3\_graph\_1\ X1\ X3))\ (k2\_cat\_1\ X1\ X2\ (k4\_graph\_1\ X1\ X3)))\ (k17\_ens\_1\ X1\ X2\ X3))))))$$