t19_rewrite3 (TMauSY8MmRjtj3YYc7Ev1a1bAf3tN34jUXF)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v2\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_flang\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $u1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k2\_flang\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.(l1\_rewrite3\ X4\ X0) \Rightarrow ((r1\_rewrite3\ X0\ X4\ X1\ X2\ X3) \Rightarrow ((r1\_struct\_0\ X4\ X1) \wedge ((X2 \in X0) \wedge ((r1\_struct\_0\ X4\ X3) \wedge ((X1 \in k9\_xtuple\_0\ (k9\_xtuple\_0\ (u1\_rewrite3\ X0\ X4))) \wedge ((X2 \in k10\_xtuple\_0\ (k9\_xtuple\_0\ (u1\_rewrite3\ X0\ X4))) \wedge (X3 \in k10\_xtuple\_0\ (u1\_rewrite3\ X0\ X4))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(l1\_rewrite3\ X1\ X0) \Rightarrow (l1\_struct\_0\ X1) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0) \Rightarrow (\forall X1.(r1\_struct\_0\ X0\ X1) \Leftrightarrow (X1 \in u1\_struct\_0\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(l1\_rewrite3\ X1\ X0) \Rightarrow (\forall X2.\forall X3.\forall X4.(r1\_rewrite3\ X0\ X1\ X2\ X3\ X4) \Leftrightarrow (k4\_tarski\ (k4\_tarski\ X2\ X3)\ X4 \in u1\_rewrite3\ X0\ X1)) \tag{5}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0)))\Rightarrow(\forall X2.(l1\_rewrite3\ X2\ X1)\Rightarrow((v2\_rewrite3\ X2\ X0\ X1)\Leftrightarrow(((v1\_relat\_1\ (u1\_rewrite3\ X1\ X2))\wedge(v1\_funct\_1\ (u1\_rewrite3\ X1\ X2)))\wedge((\neg k2\_flang\_1\ X0\in k10\_xtuple\_0\ (k9\_xtuple\_0\ (u1\_rewrite3\ X1\ X2)))\wedge(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2))\Rightarrow(\forall X4.\ (m1\_subset\_1\ X4\ (k8\_afinsq\_1\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (k8\_afinsq\_1\ X0))\Rightarrow(((k4\_tarski\ X3\ X4\in k9\_xtuple\_0\ (u1\_rewrite3\ X1\ X2))\wedge(k4\_tarski\ X3\ X5\in k9\_xtuple\_0\ (u1\_rewrite3\ X1\ X2)))\Rightarrow((X4=X5)\vee(\forall X6.(m1\_subset\_1\ X6\ (k8\_afinsq\_1\ X0))\Rightarrow((k1\_flang\_1\ X0\ X4\ X6\neq X5)\wedge(k1\_flang\_1\ X0\ X5\ X6\neq X4)))))))))))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(X1=k9\_xtuple\_0\ X0)\Leftrightarrow(\forall X2.(X2\in X1)\Leftrightarrow(\exists X3.k4\_tarski\ X2\ X3\in X0)) \tag{7}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.(\neg v1\_xboole\_0\ X3)\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (k8\_afinsq\_1\ X3))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (k8\_afinsq\_1\ X3))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X3)))\Rightarrow(\forall X7.((v2\_rewrite3\ X7\ X3\ X6)\wedge(l1\_rewrite3\ X7\ X6))\Rightarrow(((r1\_rewrite3\ X6\ X7\ X0\ X4\ X1)\wedge(r1\_rewrite3\ X6\ X7\ X0\ X5\ X2))\Rightarrow((X4=X5)\vee(\forall X8.(m1\_subset\_1\ X8\ (k8\_afinsq\_1\ X3))\Rightarrow((k1\_flang\_1\ X3\ X4\ X8\neq X5)\wedge(k1\_flang\_1\ X3\ X5\ X8\neq X4)))))))))$$