

# t38\_compos\_2 (TMPN- RwTi2LN2ZqcUCN2EBE3zAPSqGLZjdK9)

October 27, 2020

Let  $v1\_amistd.4 : \iota \Rightarrow o$  be given. Let  $l1\_compos.1 : \iota \Rightarrow o$  be given. Let  $v6\_compos.0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos.1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  be given. Let  $v1\_relat.1 : \iota \Rightarrow o$  be given. Let  $v4\_relat.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct.1 : \iota \Rightarrow o$  be given. Let  $v1\_finset.1 : \iota \Rightarrow o$  be given. Let  $v1\_afinsq.1 : \iota \Rightarrow o$  be given. Let  $v3\_compos.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_compos.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_compos.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_compos.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_compos.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_compos.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_amistd.4 X0) \wedge (l1\_compos.1 X0)) \Rightarrow (\forall X1. \\ & ((v6\_compos.0 X1 (u1\_compos.1 X0)) \wedge (m1\_subset.1 X1 (u1\_compos.1 \\ & X0))) \Rightarrow (\forall X2.((v6\_compos.0 X2 (u1\_compos.1 X0)) \wedge (m1\_subset.1 \\ & X2 (u1\_compos.1 X0))) \Rightarrow (\forall X3.((\neg v1\_xboole.0 X3) \wedge ((v1\_relat.1 \\ & X3) \wedge ((v4\_relat.1 X3 k5\_numbers) \wedge ((v5\_relat.1 X3 (u1\_compos.1 \\ & X0)) \wedge ((v1\_funct.1 X3) \wedge ((v1\_finset.1 X3) \wedge ((v1\_afinsq.1 X3) \wedge \\ & ((v3\_compos.1 X3 X0) \wedge (v4\_compos.1 X3 X0)))))))))) \Rightarrow (k1\_funct.1 \\ & (k8\_compos.1 X0 (k3\_compos.2 X0 X1 X2) X3) k6\_numbers = X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_amistd.4 X0) \wedge (l1\_compos.1 X0)) \Rightarrow (\forall X1. \\ & ((v6\_compos.0 X1 (u1\_compos.1 X0)) \wedge (m1\_subset.1 X1 (u1\_compos.1 \\ & X0))) \Rightarrow (\forall X2.((\neg v1\_xboole.0 X2) \wedge ((v1\_relat.1 X2) \wedge ((v4\_relat.1 \\ & X2 k5\_numbers) \wedge ((v5\_relat.1 X2 (u1\_compos.1 X0)) \wedge ((v1\_funct.1 \\ & X2) \wedge ((v1\_finset.1 X2) \wedge ((v1\_afinsq.1 X2) \wedge ((v3\_compos.1 X2 X0) \wedge \\ & (v4\_compos.1 X2 X0)))))))))) \Rightarrow (\forall X3.((\neg v1\_xboole.0 X3) \wedge \\ & ((v1\_relat.1 X3) \wedge ((v4\_relat.1 X3 k5\_numbers) \wedge ((v5\_relat.1 X3 \\ & (u1\_compos.1 X0)) \wedge ((v1\_funct.1 X3) \wedge ((v1\_finset.1 X3) \wedge ((v1\_afinsq.1 \\ & X3) \wedge ((v3\_compos.1 X3 X0) \wedge (v4\_compos.1 X3 X0)))))))))) \Rightarrow (k8\_compos.1 \\ & X0 (k2\_compos.2 X0 X2 X1) X3 = k8\_compos.1 X0 X2 (k1\_compos.2 X0 X1 \\ & X3))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((v1\_amistd\_4 X0)\wedge(l1\_compos\_1 \\
& X0))\wedge(((v6\_compos\_0 X1 (u1\_compos\_1 X0))\wedge(m1\_subset\_1 X1 (u1\_compos\_1 \\
& X0))\wedge((v6\_compos\_0 X2 (u1\_compos\_1 X0))\wedge(m1\_subset\_1 X2 (u1\_compos\_1 \\
& X0))))))\Rightarrow((\neg v1\_xboole\_0 (k3\_compos\_2 X0 X1 X2))\wedge((v1\_relat\_1 \\
& (k3\_compos\_2 X0 X1 X2))\wedge((v4\_relat\_1 (k3\_compos\_2 X0 X1 X2) k5\_numbers)\wedge \\
& ((v5\_relat\_1 (k3\_compos\_2 X0 X1 X2) (u1\_compos\_1 X0))\wedge((v1\_funct\_1 \\
& (k3\_compos\_2 X0 X1 X2))\wedge((v1\_finset\_1 (k3\_compos\_2 X0 X1 X2))\wedge \\
& ((v1\_afinsq\_1 (k3\_compos\_2 X0 X1 X2))\wedge((v3\_compos\_1 (k3\_compos\_2 \\
& X0 X1 X2) X0)\wedge(v4\_compos\_1 (k3\_compos\_2 X0 X1 X2) X0)))))))))) \\
& \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((v1\_amistd\_4 X0)\wedge(l1\_compos\_1 \\
& X0))\wedge(((v6\_compos\_0 X1 (u1\_compos\_1 X0))\wedge(m1\_subset\_1 X1 (u1\_compos\_1 \\
& X0))\wedge((\neg v1\_xboole\_0 X2)\wedge((v1\_relat\_1 X2)\wedge((v4\_relat\_1 X2 k5\_numbers)\wedge \\
& ((v5\_relat\_1 X2 (u1\_compos\_1 X0))\wedge((v1\_funct\_1 X2)\wedge((v1\_finset\_1 \\
& X2)\wedge((v1\_afinsq\_1 X2)\wedge((v3\_compos\_1 X2 X0)\wedge(v4\_compos\_1 X2 X0))))))))))\Rightarrow \\
& ((\neg v1\_xboole\_0 (k1\_compos\_2 X0 X1 X2))\wedge((v1\_relat\_1 (k1\_compos\_2 \\
& X0 X1 X2))\wedge((v4\_relat\_1 (k1\_compos\_2 X0 X1 X2) k5\_numbers)\wedge((v5\_relat\_1 \\
& (k1\_compos\_2 X0 X1 X2) (u1\_compos\_1 X0))\wedge((v1\_funct\_1 (k1\_compos\_2 \\
& X0 X1 X2))\wedge((v1\_finset\_1 (k1\_compos\_2 X0 X1 X2))\wedge((v1\_afinsq\_1 \\
& (k1\_compos\_2 X0 X1 X2))\wedge((v3\_compos\_1 (k1\_compos\_2 X0 X1 X2) X0)\wedge \\
& (v4\_compos\_1 (k1\_compos\_2 X0 X1 X2) X0)))))))))) \\
& \tag{4}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_amistd\_4 X0)\wedge(l1\_compos\_1 X0))\Rightarrow(\forall X1. \\
& ((v6\_compos\_0 X1 (u1\_compos\_1 X0))\wedge(m1\_subset\_1 X1 (u1\_compos\_1 \\
& X0)))\Rightarrow(\forall X2.((v6\_compos\_0 X2 (u1\_compos\_1 X0))\wedge(m1\_subset\_1 \\
& X2 (u1\_compos\_1 X0)))\Rightarrow(\forall X3.((v6\_compos\_0 X3 (u1\_compos\_1 \\
& X0))\wedge(m1\_subset\_1 X3 (u1\_compos\_1 X0)))\Rightarrow(\forall X4.((\neg v1\_xboole\_0 \\
& X4)\wedge((v1\_relat\_1 X4)\wedge((v4\_relat\_1 X4 k5\_numbers)\wedge((v5\_relat\_1 \\
& X4 (u1\_compos\_1 X0))\wedge((v1\_funct\_1 X4)\wedge((v1\_finset\_1 X4)\wedge((v1\_afinsq\_1 \\
& X4)\wedge((v3\_compos\_1 X4 X0)\wedge(v4\_compos\_1 X4 X0))))))))))\Rightarrow(k1\_funct\_1 \\
& (k8\_compos\_1 X0 (k2\_compos\_2 X0 (k3\_compos\_2 X0 X1 X2) X3) X4) k6\_numbers = \\
& X1))))))
\end{aligned}$$