

## t9\_compos\_2

(TMU9VNH9k3vUtVSsnwq3ddjMWBseSn3qJGb)

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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  $k3\_compos\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_compos\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_compos\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v3\_compos\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_compos\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_afinsq\_1 : \iota \Rightarrow o$  be given. Let  $k8\_compos\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \wedge \\ & ((v6\_compos\_0 X1 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 X1 (u1\_compos\_1 \\ & X0)))) \Rightarrow ((v1\_relat\_1 (k11\_compos\_1 X0 X1)) \wedge ((v4\_relat\_1 (k11\_compos\_1 \\ & X0 X1) k5\_numbers) \wedge ((v5\_relat\_1 (k11\_compos\_1 X0 X1) (u1\_compos\_1 \\ & X0)) \wedge ((v1\_funct\_1 (k11\_compos\_1 X0 X1)) \wedge ((v1\_finset\_1 (k11\_compos\_1 \\ & X0 X1)) \wedge ((v3\_compos\_1 (k11\_compos\_1 X0 X1) X0) \wedge (v4\_compos\_1 ( \\ & k11\_compos\_1 X0 X1) X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1\_compos\_1 X0) \wedge (m1\_subset\_1 X1 (u1\_compos\_1 \\ & X0))) \Rightarrow ((\neg v1\_xboole\_0 (k11\_compos\_1 X0 X1)) \wedge ((v1\_relat\_1 (k11\_compos\_1 \\ & X0 X1)) \wedge ((v4\_relat\_1 (k11\_compos\_1 X0 X1) k5\_numbers) \wedge ((v5\_relat\_1 \\ & (k11\_compos\_1 X0 X1) (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 (k11\_compos\_1 \\ & X0 X1)) \wedge ((v1\_finset\_1 (k11\_compos\_1 X0 X1)) \wedge (v1\_afinsq\_1 (k11\_compos\_1 \\ & X0 X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \Rightarrow (\forall X1. \\ & ((v6\_compos\_0 X1 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 X1 (u1\_compos\_1 \\ & X0))) \Rightarrow (\forall X2. ((v6\_compos\_0 X2 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 \\ & X2 (u1\_compos\_1 X0))) \Rightarrow (k3\_compos\_2 X0 X1 X2 = k8\_compos\_1 X0 (k11\_compos\_1 \\ & X0 X1) (k11\_compos\_1 X0 X2)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \Rightarrow (\forall X1. \\
& ((v6\_compos\_0 X1 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 X1 (u1\_compos\_1 \\
& X0))) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 \\
& X2 k5\_numbers) \wedge ((v5\_relat\_1 X2 (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 \\
& X2) \wedge ((v1\_finset\_1 X2) \wedge ((v1\_afinsq\_1 X2) \wedge ((v3\_compos\_1 X2 X0) \wedge \\
& (v4\_compos\_1 X2 X0)))))))))) \Rightarrow (k1\_compos\_2 X0 X1 X2 = k8\_compos\_1 \\
& X0 (k11\_compos\_1 X0 X1) X2))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \Rightarrow (\forall X1. \\
& ((v6\_compos\_0 X1 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 X1 (u1\_compos\_1 \\
& X0))) \Rightarrow (\forall X2.((v6\_compos\_0 X2 (u1\_compos\_1 X0)) \wedge (m1\_subset\_1 \\
& X2 (u1\_compos\_1 X0))) \Rightarrow (k3\_compos\_2 X0 X1 X2 = k1\_compos\_2 X0 X1 ( \\
& k11\_compos\_1 X0 X2))))
\end{aligned}$$