

t24\_compos\_2 (TMMzJgKG-  
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October 27, 2020

Let  $v1\_amistd.4 : \iota \Rightarrow o$  be given. Let  $l1\_compos.1 : \iota \Rightarrow o$  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  $u1\_compos.1 : \iota \Rightarrow \iota$  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  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_compos.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_compos.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k63\_valued.1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1\_xboole.0 X0) \wedge ((v1\_relat.1 X0) \wedge \\ & ((v4\_relat.1 X0 k5\_numbers) \wedge ((v1\_funct.1 X0) \wedge (v1\_finset.1 X0)))))) \wedge \\ & ((\neg v1\_xboole.0 X1) \wedge ((v1\_relat.1 X1) \wedge ((v4\_relat.1 X1 k5\_numbers) \wedge \\ & ((v1\_funct.1 X1) \wedge (v1\_finset.1 X1)))))) \Rightarrow (r2\_compos.2 X0 X0) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1\_xboole.0 X0) \wedge ((v1\_relat.1 X0) \wedge \\ & ((v4\_relat.1 X0 k5\_numbers) \wedge ((v1\_funct.1 X0) \wedge (v1\_finset.1 X0)))))) \wedge \\ & ((\neg v1\_xboole.0 X1) \wedge ((v1\_relat.1 X1) \wedge ((v4\_relat.1 X1 k5\_numbers) \wedge \\ & ((v1\_funct.1 X1) \wedge (v1\_finset.1 X1)))))) \Rightarrow ((r2\_compos.2 X0 X1) \Leftrightarrow \\ & (r1\_compos.2 X0 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1\_xboole.0 X0) \wedge ((v1\_relat.1 X0) \wedge ((v4\_relat.1 \\ & X0 k5\_numbers) \wedge ((v1\_funct.1 X0) \wedge (v1\_finset.1 X0)))))) \Rightarrow (\forall X1. \\ & (r1\_compos.2 X0 X1) \Leftrightarrow (r1\_tarski (k63\_valued.1 X0) X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (X0 = X1) \Leftrightarrow ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X0)) \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 \textit{k5\_numbers}) \wedge \\ & (v5\_relat\_1 X1 (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\ & X1) \wedge ((v1\_afinsq\_1 X1) \wedge ((v3\_compos\_1 X1 X0) \wedge (v4\_compos\_1 X1 X0))))))) \Rightarrow \\ & (\forall X2.(r1\_tarSKI X1 X2) \Rightarrow (r1\_compos\_2 X1 X2))) \end{aligned}$$