

## t42\_compos\_2

(TMP1CkVDKAvW1PLcjhxM5Vkbd2Xtepc1MTw)

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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  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xreal.0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k62\_valued.1 : \iota \Rightarrow \iota$  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  $r2\_compos.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_amistd.4 X0) \wedge (l1\_compos.1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v1\_xboole.0 X1) \wedge (v1\_relat.1 X1) \wedge ((v4\_relat.1 X1 k5\_numbers) \wedge \\
& ((v5\_relat.1 X1 (u1\_compos.1 X0)) \wedge ((v1\_funct.1 X1) \wedge ((v1\_finset.1 \\
& X1) \wedge ((v1\_afinsq.1 X1) \wedge ((v3\_compos.1 X1 X0) \wedge (v4\_compos.1 X1 X0)))))) \Rightarrow \\
& (\forall X2.((\neg v1\_xboole.0 X2) \wedge (v1\_relat.1 X2) \wedge ((v4\_relat.1 \\
& X2 k5\_numbers) \wedge ((v5\_relat.1 X2 (u1\_compos.1 X0)) \wedge ((v1\_funct.1 \\
& X2) \wedge ((v1\_finset.1 X2) \wedge ((v1\_afinsq.1 X2) \wedge ((v3\_compos.1 X2 X0) \wedge \\
& (v4\_compos.1 X2 X0)))))) \Rightarrow (\forall X3.(v7\_ordinal1 X3) \Rightarrow (( \\
& r2\_compos.2 X1 X2) \Rightarrow ((r1\_xreal.0 (k62\_valued.1 X1) X3) \vee (k1\_funct.1 \\
& X1 X3 = k1\_funct.1 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_amistd.4 X0) \wedge (l1\_compos.1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v1\_xboole.0 X1) \wedge (v1\_relat.1 X1) \wedge ((v4\_relat.1 X1 k5\_numbers) \wedge \\
& ((v5\_relat.1 X1 (u1\_compos.1 X0)) \wedge ((v1\_funct.1 X1) \wedge ((v1\_finset.1 \\
& X1) \wedge ((v1\_afinsq.1 X1) \wedge ((v3\_compos.1 X1 X0) \wedge (v4\_compos.1 X1 X0)))))) \Rightarrow \\
& (\forall X2.((\neg v1\_xboole.0 X2) \wedge (v1\_relat.1 X2) \wedge ((v4\_relat.1 \\
& X2 k5\_numbers) \wedge ((v5\_relat.1 X2 (u1\_compos.1 X0)) \wedge ((v1\_funct.1 \\
& X2) \wedge ((v1\_finset.1 X2) \wedge ((v1\_afinsq.1 X2) \wedge ((v3\_compos.1 X2 X0) \wedge \\
& (v4\_compos.1 X2 X0)))))) \Rightarrow (r2\_compos.2 X1 (k8\_compos.1 X0 X1 \\
& X2))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((l1\_compos\_1 X0) \wedge (((\neg v1\_xboole\_0 \\
& X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v5\_relat\_1 \\
& X1 (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 X1) \wedge ((v1\_afinsq\_1 \\
& X1) \wedge ((v3\_compos\_1 X1 X0) \wedge (v4\_compos\_1 X1 X0)))))))))) \wedge ((\neg v1\_xboole\_0 \\
& X2) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 \\
& X2 (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_finset\_1 X2) \wedge ((v1\_afinsq\_1 \\
& X2) \wedge ((v3\_compos\_1 X2 X0) \wedge (v4\_compos\_1 X2 X0)))))))))) \Rightarrow ((\neg v1\_xboole\_0 \\
& (k8\_compos\_1 X0 X1 X2)) \wedge ((v1\_relat\_1 (k8\_compos\_1 X0 X1 X2)) \wedge ( \\
& (v4\_relat\_1 (k8\_compos\_1 X0 X1 X2) k5\_numbers) \wedge ((v5\_relat\_1 ( \\
& k8\_compos\_1 X0 X1 X2) (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 (k8\_compos\_1 \\
& X0 X1 X2)) \wedge ((v1\_finset\_1 (k8\_compos\_1 X0 X1 X2)) \wedge ((v1\_afinsq\_1 \\
& (k8\_compos\_1 X0 X1 X2)) \wedge ((v3\_compos\_1 (k8\_compos\_1 X0 X1 X2) X0) \wedge \\
& (v4\_compos\_1 (k8\_compos\_1 X0 X1 X2) X0))))))))))
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. ((v1\_amistd\_4 X0) \wedge (l1\_compos\_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge \\
& ((v5\_relat\_1 X1 (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\
& X1) \wedge ((v1\_afinsq\_1 X1) \wedge ((v3\_compos\_1 X1 X0) \wedge (v4\_compos\_1 X1 X0)))))))))) \Rightarrow \\
& (\forall X2. ((\neg v1\_xboole\_0 X2) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 \\
& X2 k5\_numbers) \wedge ((v5\_relat\_1 X2 (u1\_compos\_1 X0)) \wedge ((v1\_funct\_1 \\
& X2) \wedge ((v1\_finset\_1 X2) \wedge ((v1\_afinsq\_1 X2) \wedge ((v3\_compos\_1 X2 X0) \wedge \\
& (v4\_compos\_1 X2 X0)))))))))) \Rightarrow (\forall X3. (v7\_ordinal1 X3) \Rightarrow (( \\
& \neg r1\_xreal\_0 (k62\_valued\_1 X1) X3) \Rightarrow (k1\_funct\_1 (k8\_compos\_1 \\
& X0 X1 X2) X3 = k1\_funct\_1 X1 X3))))))
\end{aligned}$$