

# t23\_chord (TMJvNEKR- poZJUPzWaZfqxmy7CjocJcKTv4o)

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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  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_glib\_000 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $m2\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k21\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m3\_glib\_001 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k13\_glib\_001 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_glib\_000 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k24\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_glib\_001 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k25\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r5\_glib\_000 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ (r1\_tarski X1 X2) \Rightarrow (r1\_tarski (k21\_glib\_000 X0 X1) (k21\_glib\_000 \\ X0 X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski \\ X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. (m1\_glib\_000 \\ X1 X0) \Rightarrow (\forall X2. (m3\_glib\_001 X2 X0) \Rightarrow (((r1\_tarski (k13\_glib\_001 \\ X0 X2) (k24\_glib\_000 X0 X1)) \wedge (r1\_tarski (k14\_glib\_001 X0 X2) (k25\_glib\_000 \\ X0 X1))) \Rightarrow (m3\_glib\_001 X2 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. (m3\_glib\_001 \\ X1 X0) \Rightarrow (r1\_tarski (k14\_glib\_001 X0 X1) (k21\_glib\_000 X0 (k13\_glib\_001 \\ X0 X1)))) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1 \\ & X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge((v1\_finset\_1\ X0)\wedge(v1\_glib\_000 \\ & X0))))))\Rightarrow(\forall X3.(m2\_glib\_000\ X3\ X0\ X1\ X2)\Rightarrow(m1\_glib\_000\ X3 \\ & X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1 \\ & X0)\wedge((v1\_finset\_1\ X0)\wedge(v1\_glib\_000\ X0))))))\Rightarrow(\forall X1.\forall X2. \\ & \forall X3.(m1\_glib\_000\ X3\ X0)\Rightarrow((((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1 \\ & X1\ (k1\_zfmisc\_1\ (k6\_glib\_000\ X0)))))\wedge(r1\_tarski\ X2\ (k21\_glib\_000 \\ & X0\ X1)))\Rightarrow((m2\_glib\_000\ X3\ X0\ X1\ X2)\Leftrightarrow((k24\_glib\_000\ X0\ X3 = X1)\wedge( \\ & k25\_glib\_000\ X0\ X3 = X2))))\wedge((\neg(\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1 \\ & X1\ (k1\_zfmisc\_1\ (k6\_glib\_000\ X0)))))\wedge(r1\_tarski\ X2\ (k21\_glib\_000 \\ & X0\ X1)))\Rightarrow((m2\_glib\_000\ X3\ X0\ X1\ X2)\Leftrightarrow(r5\_glib\_000\ X3\ X0)))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1 \\ & X0)\wedge((v1\_finset\_1\ X0)\wedge(v1\_glib\_000\ X0))))))\Rightarrow(\forall X1.((\neg \\ & v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k6\_glib\_000\ X0))))))\Rightarrow \\ & (\forall X2.(m2\_glib\_000\ X2\ X0\ X1\ (k21\_glib\_000\ X0\ X1))\Rightarrow(\forall X3. \\ & (m3\_glib\_001\ X3\ X0)\Rightarrow((r1\_tarski\ (k13\_glib\_001\ X0\ X3)\ X1)\Rightarrow(m3\_glib\_001 \\ & X3\ X2)))) \end{aligned}$$