

t45\_chord  
(TMY6HURcPR8nZjaX1QJP4UgkC2HdKD66NVn)

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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  $m2\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k21\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_chord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  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  $k25\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r5\_glib\_000 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (k6\_glib\_000 X0))) \Rightarrow (\forall X2.(m2\_glib\_000 \\ X2 X0 X1 (k21\_glib\_000 X0 X1)) \Rightarrow (\forall X3.\forall X4.((X3 \in X1) \wedge \\ (X4 \in X1)) \Rightarrow (\forall X5.(r1\_glib\_000 X0 X3 X4 X5) \Rightarrow (r1\_glib\_000 X2 \\ X3 X4 X5)))))) \end{aligned} \quad (1)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge \\ ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \wedge (m1\_glib\_000 \\ X1 X0)) \Rightarrow (k24\_glib\_000 X0 X1 = k6\_glib\_000 X1) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_glib\_000 \\ X1 X0) \Rightarrow (\forall X2.\forall X3.\forall X4.(r1\_glib\_000 X1 X2 X3 \\ X4) \Rightarrow (r1\_glib\_000 X0 X2 X3 X4))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 \\ & X0 k5\_numbers)\wedge((v1\_funct\_1 X0)\wedge((v1\_finset\_1 X0)\wedge(v1\_glib\_000 \\ & X0))))\Rightarrow(\forall X3.(m2\_glib\_000 X3 X0 X1 X2)\Rightarrow(m1\_glib\_000 X3 \\ & X0)) \end{aligned} \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 \\ & X0)\wedge((v1\_finset\_1 X0)\wedge(v1\_glib\_000 X0))))\Rightarrow(\forall X1.(m1\_subset\_1 \\ & X1 (k6\_glib\_000 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k6\_glib\_000 \\ & X0))\Rightarrow((r1\_chord X0 X1 X2)\Leftrightarrow(\exists X3.r1\_glib\_000 X0 X1 X2 X3)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 \\ & X0)\wedge((v1\_finset\_1 X0)\wedge(v1\_glib\_000 X0))))\Rightarrow(\forall X1.\forall X2. \\ & \forall X3.(m1\_glib\_000 X3 X0)\Rightarrow((((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k6\_glib\_000 X0))))\wedge(r1\_tarski X2 (k21\_glib\_000 \\ & X0 X1)))\Rightarrow((m2\_glib\_000 X3 X0 X1 X2)\Leftrightarrow((k24\_glib\_000 X0 X3 = X1)\wedge( \\ & k25\_glib\_000 X0 X3 = X2))))\wedge(\neg((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k6\_glib\_000 X0))))\wedge(r1\_tarski X2 (k21\_glib\_000 \\ & X0 X1)))\Rightarrow((m2\_glib\_000 X3 X0 X1 X2)\Leftrightarrow(r5\_glib\_000 X3 X0)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\Rightarrow((m1\_subset\_1 X1 X0)\Leftrightarrow \\ & (X1 \in X0)))\wedge((v1\_xboole\_0 X0)\Rightarrow((m1\_subset\_1 X1 X0)\Leftrightarrow(v1\_xboole\_0 \\ & X1))) \end{aligned} \quad (9)$$

### Theorem 1

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 \\ & X0)\wedge((v1\_finset\_1 X0)\wedge(v1\_glib\_000 X0))))\Rightarrow(\forall X1.((\neg \\ & v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k6\_glib\_000 X0))))\Rightarrow \\ & (\forall X2.(m2\_glib\_000 X2 X0 X1 (k21\_glib\_000 X0 X1))\Rightarrow(\forall X3. \\ & (m1\_subset\_1 X3 (k6\_glib\_000 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 \\ & (k6\_glib\_000 X0))\Rightarrow(\forall X5.(m1\_subset\_1 X5 (k6\_glib\_000 X2))\Rightarrow \\ & (\forall X6.(m1\_subset\_1 X6 (k6\_glib\_000 X2))\Rightarrow(((X3 = X5)\wedge(X4 = \\ & X6))\Rightarrow((r1\_chord X0 X3 X4)\Leftrightarrow(r1\_chord X2 X5 X6)))))))))) \end{aligned}$$