

## t83\_chord

(TMU7TZZZCqa7DWEkjfdWvBmstBLg2VDuM7C)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $r1\_chord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_chord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_chord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k21\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_glib\_002 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
 & X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & X1 (k6\_glib\_000 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k6\_glib\_000 \\
 & X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\neg r1\_chord X0 X1 X2) \wedge (\exists X3.(m2\_chord X3 \\
 & X0 X1 X2) \wedge ((v4\_chord X3 X0 X1 X2) \wedge (\exists X4.(m2\_glib\_000 X4 X0 \\
 & (k6\_subset\_1 (k6\_glib\_000 X0) X3) (k21\_glib\_000 X0 (k6\_subset\_1 \\
 & (k6\_glib\_000 X0) X3))) \wedge (\exists X5.(m1\_subset\_1 X5 (k6\_glib\_000 \\
 & X4)) \wedge ((X5 = X1) \wedge (\exists X6.(m1\_subset\_1 X6 (k6\_glib\_000 X0)) \wedge \\
 & ((X6 \in X3) \wedge (\forall X7.(m1\_subset\_1 X7 (k6\_glib\_000 X0)) \Rightarrow (\neg(X7 \in \\
 & k1\_glib\_002 X4 X5) \wedge (r1\_chord X0 X6 X7))))))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
 & X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & X1 (k6\_glib\_000 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k6\_glib\_000 \\
 & X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\neg r1\_chord X0 X1 X2) \wedge (\exists X3.(m2\_chord X3 \\
 & X0 X1 X2) \wedge ((v4\_chord X3 X0 X1 X2) \wedge (\exists X4.(m2\_chord X4 X0 X2 X1) \wedge \\
 & ((X3 = X4) \wedge (\neg v4\_chord X4 X0 X2 X1))))))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (k6\_glib\_000 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k6\_glib\_000 \\ X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\neg r1\_chord X0 X1 X2) \wedge (\neg \forall X3.(m2\_chord \\ X3 X0 X1 X2)) \Rightarrow (m2\_chord X3 X0 X2 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 \\ X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 \\ X0)))))) \wedge ((m1\_subset\_1 X1 (k6\_glib\_000 X0)) \wedge (m1\_subset\_1 X2 ( \\ k6\_glib\_000 X0))) \Rightarrow ((r1\_chord X0 X1 X2) \Rightarrow (r1\_chord X0 X2 X1)) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (k6\_glib\_000 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k6\_glib\_000 \\ X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\neg r1\_chord X0 X1 X2) \wedge (\exists X3.(m2\_chord X3 \\ X0 X1 X2) \wedge ((v4\_chord X3 X0 X1 X2) \wedge (\exists X4.(m2\_glib\_000 X4 X0 \\ (k6\_subset\_1 (k6\_glib\_000 X0) X3) (k21\_glib\_000 X0 (k6\_subset\_1 \\ (k6\_glib\_000 X0) X3))) \wedge (\exists X5.(m1\_subset\_1 X5 (k6\_glib\_000 \\ X4)) \wedge ((X5 = X2) \wedge (\exists X6.(m1\_subset\_1 X6 (k6\_glib\_000 X0)) \wedge \\ ((X6 \in X3) \wedge (\forall X7.(m1\_subset\_1 X7 (k6\_glib\_000 X0)) \Rightarrow (\neg(X7 \in \\ k1\_glib\_002 X4 X5) \wedge (r1\_chord X0 X6 X7)))))))))))))) \end{aligned}$$