

t110\_chord  
(TMbhASVit33N9Wy7FJ3daB8RqpqGsegzABi)

October 27, 2020

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  $v2\_glib\_000 : \iota \Rightarrow o$  be given. Let  $v6\_chord : \iota \Rightarrow o$  be given. Let  $v7\_chord : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m3\_chord : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r5\_glib\_000 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k14\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k16\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k18\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k20\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k21\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k23\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_chord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_chord : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_chord : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 \\ & X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\ & X1) \wedge (v1\_glib\_000 X1)))))) \Rightarrow (\forall X2. \forall X3. \forall X4. \\ & (m2\_glib\_000 X4 X0 X2 X3) \Rightarrow ((r5\_glib\_000 X0 X1) \Rightarrow (m2\_glib\_000 X4 \\ & X1 X2 X3))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 \\ & X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\ & X1) \wedge (v1\_glib\_000 X1)))))) \Rightarrow (\forall X2. \forall X3. (r5\_glib\_000 \\ & X0 X1) \Rightarrow ((k14\_glib\_000 X0 = k14\_glib\_000 X1) \wedge ((k16\_glib\_000 X0 = \\ & k16\_glib\_000 X1) \wedge ((k18\_glib\_000 X0 X2 = k18\_glib\_000 X1 X2) \wedge (( \\ & k19\_glib\_000 X0 X2 = k19\_glib\_000 X1 X2) \wedge ((k20\_glib\_000 X0 X2 = k20\_glib\_000 \\ & X1 X2) \wedge ((k21\_glib\_000 X0 X2 = k21\_glib\_000 X1 X2) \wedge (k23\_glib\_000 \\ & X0 X2 X3 = k23\_glib\_000 X1 X2 X3)))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
& X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v2\_glib\_000 X0)))))) \Rightarrow \\
& (\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge (( \\
& v1\_funct\_1 X1) \wedge ((v1\_finset\_1 X1) \wedge ((v1\_glib\_000 X1) \wedge (v2\_glib\_000 \\
& X1)))))) \Rightarrow (\forall X2.(m3\_chord X2 X0) \Rightarrow ((r5\_glib\_000 X0 X1) \Rightarrow ( \\
& m3\_chord X2 X1)))) \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge \\
& ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \wedge (( \\
& v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge \\
& ((v1\_finset\_1 X1) \wedge (v1\_glib\_000 X1)))))) \Rightarrow ((r5\_glib\_000 X0 X1) \Rightarrow \\
& (r5\_glib\_000 X1 X0)) \tag{4}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 \\
& X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 \\
& X0) \wedge (v2\_glib\_000 X0)))))) \wedge ((m3\_chord X1 X0) \wedge (v7\_ordinal1 X2))) \Rightarrow \\
& (k4\_chord X0 X1 X2 = k1\_chord X1 X2) \tag{5}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
& X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v2\_glib\_000 X0)))))) \Rightarrow \\
& (\forall X1.(m3\_chord X1 X0) \Rightarrow ((v7\_chord X1 X0) \Leftrightarrow (\forall X2.(( \\
& \neg v1\_xboole\_0 X2) \wedge (v7\_ordinal1 X2)) \Rightarrow ((r1\_xxreal\_0 X2 (k3\_finseq\_1 \\
& X1)) \Rightarrow (\forall X3.(m2\_glib\_000 X3 X0 (k4\_chord X0 X1 X2) (k21\_glib\_000 \\
& X0 (k4\_chord X0 X1 X2))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (k6\_glib\_000 \\
& X3)) \Rightarrow ((X4 = k1\_funct\_1 X1 X2) \Rightarrow (v3\_chord X4 X3)))))))) \tag{6}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
& X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge ((v2\_glib\_000 X0) \wedge \\
& (v6\_chord X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\
& X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 X1) \wedge ((v1\_glib\_000 \\
& X1) \wedge ((v2\_glib\_000 X1) \wedge (v6\_chord X1)))))) \Rightarrow (\forall X2.((v7\_chord \\
& X2 X0) \wedge (m3\_chord X2 X0) \Rightarrow ((r5\_glib\_000 X0 X1) \Rightarrow ((v7\_chord X2 X1) \wedge \\
& (m3\_chord X2 X1))))))
\end{aligned}$$