

t56\_chord  
(TMNFN5pcbEftzNrZEhnsjHdUtfuYfXJAPh9)

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  $v3\_glib\_000 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k2\_chord : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v10\_glib\_000 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k28\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_chord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ (m1\_subset\_1 X2 (k6\_glib\_000 X0)) \Rightarrow ((X1 \in k28\_glib\_000 X0 X2) \Leftrightarrow ( \\ \exists X3.(m1\_subset\_1 X3 (k6\_glib\_000 X0)) \wedge (r1\_glib\_000 X0 \\ X2 X3 X1)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg (X0 \in X1) \wedge ((m1\_subset\_1 X1 ( \\ k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (k6\_glib\_000 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k6\_glib\_000 \\ X0)) \Rightarrow ((X1 \in k2\_chord X0 (k6\_domain\_1 (k6\_glib\_000 X0) X2)) \Leftrightarrow ((X1 \neq \\ X2) \wedge (r1\_chord X0 X2 X1)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (5)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow ((v3\_glib\_000 X0) \Leftrightarrow (\forall X1.\forall X2.\neg r1\_glib\_000 X0 X1 X1 X2)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (7)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (8)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (m1\_subset\_1 (k2\_chord X0 X1) (k1\_zfmisc\_1 (k6\_glib\_000 X0))) \quad (10)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k6\_glib\_000 X0)) \Rightarrow ((v10\_glib\_000 X1 X0) \Leftrightarrow (k28\_glib\_000 X0 X1 = k1\_xboole\_0))) \quad (11)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k6\_glib\_000 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k6\_glib\_000 X0)) \Rightarrow ((r1\_chord X0 X1 X2) \Leftrightarrow (\exists X3.r1\_glib\_000 X0 X1 X2 X3)))) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Leftrightarrow (\forall X1.\neg X1 \in X0) \quad (13)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v3\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k6\_glib\_000 X0)) \Rightarrow ((k2\_chord X0 (k6\_domain\_1 (k6\_glib\_000 X0) X1) = k1\_xboole\_0) \Leftrightarrow (v10\_glib\_000 X1 X0)))$$