

# t19\_graph\_2 (TMXWDM- pJv1doFHYDmrNEpA5LETSVH94QaeS)

October 27, 2020

Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v1\_graph\_2 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

$$\forall X0.\neg(k1\_card\_1 X0 = np\_2) \wedge (\forall X1.\forall X2.\neg(X1 \neq X2) \wedge (X0 = k2\_tarski X1 X2)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \neq X1) \Rightarrow (k5\_card\_1 (k2\_tarski X0 X1) = np\_2) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(k1\_tarski X0 = k2\_tarski X1 X2) \Rightarrow (X0 = X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k1\_funct\_1 X1 np\_1 = X0))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)))\Rightarrow((X1 = k9\_finseq\_1 X0)\Leftrightarrow((k3\_finseq\_1 X1 = np\_1)\wedge(k10\_xtuple\_0 X1 = k1\_tarSKI X0))) \quad (6)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(\neg(r1\_xreal\_0 X0 np\_1)\wedge((X0\neq k6\_numbers)\wedge(X0\neq np\_1))) \quad (7)$$

Assume the following.

$$v1\_xboole\_0 np\_0 \quad (8)$$

Assume the following.

$$\forall X0.k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \quad (9)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (10)$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0)\Rightarrow(k5\_card\_1 X0 = k1\_card\_1 X0) \quad (11)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow(k3\_finseq\_1 X0 = k1\_card\_1 X0) \quad (12)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (13)$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0)\Rightarrow((v1\_finset\_1 (k1\_card\_1 X0))\wedge(v1\_card\_1 (k1\_card\_1 X0))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\neg v1\_xboole\_0 (k2\_tarSKI X0 X1) \quad (15)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow((\neg v1\_xboole\_0 (k1\_card\_1 X0))\wedge(v1\_card\_1 (k1\_card\_1 X0))) \quad (16)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge(v1\_finset\_1 X0))\Rightarrow(v1\_finset\_1 (k10\_xtuple\_0 X0)) \quad (17)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v1\_xboole\_0 (k10\_xtuple\_0 X0)) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k9\_finseq\_1 X0)) \quad (19)$$

Assume the following.

$$\forall X0.v1\_card\_1 (k1\_card\_1 X0) \quad (20)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow ((v1\_graph\_2 X0) \Leftrightarrow (k5\_card\_1 (k10\_xtuple\_0 X0) = np\_2)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski X0 X1 = k2\_tarski X1 X0 \quad (22)$$

Assume the following.

$$\forall X0.((v3\_ordinal1 X0) \wedge (v1\_finset\_1 X0)) \Rightarrow (v7\_ordinal1 X0) \quad (23)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0))) \quad (24)$$

Assume the following.

$$\forall X0.(v1\_card\_1 X0) \Rightarrow (v3\_ordinal1 X0) \quad (25)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow ((v1\_graph\_2 X0) \Leftrightarrow ((\neg r1\_xreal\_0 (k3\_finseq\_1 X0) np\_1) \wedge (\exists X1.\exists X2.(X1 \neq X2) \wedge (k10\_xtuple\_0 X0 = k2\_tarski X1 X2))))$$