

# t3\_graph\_3 (TMShsy- Cwn2oVnmTk8gC57XueBtPRcvuQVGq)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_graph\_1 : \iota \Rightarrow o$  be given. Let  $m1\_graph\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_graph\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. 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  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_graph\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (k2\_xcmplx\_0 X0 (k4\_xcmplx\_0 X1) = k6\_xcmplx\_0 X0 X1) \quad (3)$$

Assume the following.

$$v1\_xboole\_0 np\_0 \quad (4)$$

Assume the following.

$$k4\_xcmplx\_0 (k4\_xcmplx\_0 np\_1) = np\_1 \quad (5)$$

Assume the following.

$$k4\_xcmplx\_0 \ np\_0 = np\_0 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 \ X1 \ X0) \Leftrightarrow (m1\_finseq\_1 \ X1 \ X0) \quad (7)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v1\_finseq\_1 \ X0))) \Rightarrow (k3\_finseq\_1 \ X0 = k1\_card\_1 \ X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 \ X0 \ k5\_numbers) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (k2\_nat\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_finset\_1 \ X0) \Rightarrow ((v1\_finset\_1 \ (k1\_card\_1 \ X0)) \wedge (v1\_card\_1 \ (k1\_card\_1 \ X0))) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 \ X0) \Rightarrow ((v1\_xcmplx\_0 \ (k4\_xcmplx\_0 \ X0)) \wedge (v1\_xreal\_0 \ (k4\_xcmplx\_0 \ X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(((v3\_xxreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X0)) \wedge ((\neg v3\_xxreal\_0 \ X1) \wedge (v1\_xreal\_0 \ X1))) \Rightarrow (v2\_xxreal\_0 \ (k6\_xcmplx\_0 \ X1 \ X0)) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 \ X0) \Rightarrow ((v1\_xboole\_0 \ (k1\_card\_1 \ X0)) \wedge (v1\_card\_1 \ (k1\_card\_1 \ X0))) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v3\_xxreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X0)) \Rightarrow ((v1\_xcmplx\_0 \ (k4\_xcmplx\_0 \ X0)) \wedge (\neg v2\_xxreal\_0 \ (k4\_xcmplx\_0 \ X0))) \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 \ X0) \wedge (l1\_graph\_1 \ X0)) \Rightarrow (\forall X1.(m1\_graph\_1 \ X1 \ X0) \Rightarrow ((v1\_relat\_1 \ X1) \wedge ((v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1)))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1)) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_graph\_1 X0))\Rightarrow(\forall X1. \\ (m2\_finseq\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge \\ ((v1\_funct\_1 X2)\wedge(v1\_finseq\_1 X2)))\Rightarrow((r1\_graph\_2 X0 X1 X2)\Leftrightarrow( \\ (k3\_finseq\_1 X1 = k2\_nat\_1 (k3\_finseq\_1 X2) np\_1)\wedge(\forall X3. \\ (m2\_subset\_1 X3 k1\_numbers k5\_numbers)\Rightarrow(((r1\_xreal\_0 np\_1 \\ X3)\wedge(r1\_xreal\_0 X3 (k3\_finseq\_1 X2))\Rightarrow(r2\_graph\_1 X0 (k7\_partfun1 \\ (u1\_struct\_0 X0) X1 X3) (k7\_partfun1 (u1\_struct\_0 X0) X1 (k2\_nat\_1 \\ X3 np\_1)) (k1\_funct\_1 X2 X3)))))))))) \quad (17) \end{aligned}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k2\_xcmplx\_0 X0 X1 = k2\_xcmplx\_0 X1 X0) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(k2\_nat\_1 X0 X1 = k2\_nat\_1 X1 X0) \quad (19)$$

Assume the following.

$$\forall X0.((v3\_ordinal1 X0)\wedge(v1\_finset\_1 X0))\Rightarrow(v7\_ordinal1 X0) \quad (20)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xcmplx\_0 X0) \quad (21)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((v7\_ordinal1 X0)\wedge(\neg v3\_xreal\_0 X0)) \quad (22)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_xreal\_0 X0) \quad (23)$$

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.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (25)$$

Assume the following.

$$\forall X0.(v1\_card\_1 X0)\Rightarrow(v3\_ordinal1 X0) \quad (26)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. \\ & (m1\_graph\_1 X1 X0) \Rightarrow (\forall X2. (m2\_finseq\_1 X2 (u1\_struct\_0 X0)) \Rightarrow \\ & (\neg (r1\_graph\_2 X0 X2 X1) \wedge (v1\_xboole\_0 X2)))) \end{aligned}$$