

# t32\_graph\_2 (TM- MEwN7xBULMaHu6Dj2SznfWS33xdXGgT1J)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_graph\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  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  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $np\_0 : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  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  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $l5\_struct\_0 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow ((v1\_xboole\_0 X0) \vee ((v2\_xxreal\_0 X1) \vee (v3\_xxreal\_0 X0)))))) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k1\_funct\_1 X1 np\_1 = X0))) \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\neg v1\_xboole\_0 \ np\_1 \quad (5)$$

Assume the following.

$$(m2\_subset\_1 \ np\_0 \ k1\_numbers \ k5\_numbers) \wedge ((m1\_subset\_1 \ np\_0 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_0 \ k1\_numbers)) \quad (6)$$

Assume the following.

$$v1\_xboole\_0 \ np\_0 \quad (7)$$

Assume the following.

$$k2\_xcmplx\_0 \ np\_1 \ np\_0 = np\_1 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 \ X0) \wedge ((\neg v1\_xboole\_0 \ X1) \wedge \\ & (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & \ X2 \ X0 \ X1) \Leftrightarrow (m1\_subset\_1 \ X2 \ X1)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. k9\_finseq\_1 \ X0 = k5\_finseq\_1 \ X0 \quad (10)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (11)$$

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.

$$\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k5\_numbers) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (k2\_nat\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 \ X0) \wedge (m1\_subset\_1 \ X1 \ X0)) \Rightarrow (k12\_finseq\_1 \ X0 \ X1 = k5\_finseq\_1 \ X1) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \exists X1. (m1\_finseq\_1 \ X1 \ X0) \wedge ((v1\_relat\_1 \ X1) \wedge \\ & (v4\_relat\_1 \ X1 \ k5\_numbers) \wedge ((v5\_relat\_1 \ X1 \ X0) \wedge ((v1\_funct\_1 \\ & \ X1) \wedge ((v1\_xboole\_0 \ X1) \wedge ((v1\_finset\_1 \ X1) \wedge (v1\_finseq\_1 \ X1)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (16)$$

Assume the following.

$$\neg v1\_finset\_1 k4\_ordinal1 \quad (17)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (18)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (19)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (20)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow ((v1\_xboole\_0 (k1\_card\_1 X0)) \wedge (v1\_card\_1 (k1\_card\_1 X0))) \quad (21)$$

Assume the following.

$$\forall X0.(l5\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (22)$$

Assume the following.

$$\forall X0.(l1\_graph\_1 X0) \Rightarrow (l5\_struct\_0 X0) \quad (23)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k9\_finseq\_1 X0)) \quad (24)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (m2\_finseq\_1 (k12\_finseq\_1 X0 X1) X0) \quad (26)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_graph\_1 X0)) \Rightarrow (\forall X1. \\ & (m2\_finseq\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge \\ & ((v1\_funct\_1 X2) \wedge (v1\_finseq\_1 X2))) \Rightarrow ((r1\_graph\_2 X0 X1 X2) \Leftrightarrow ( \\ & (k3\_finseq\_1 X1 = k2\_nat\_1 (k3\_finseq\_1 X2) np\_1)) \wedge (\forall X3. \\ & (m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow (((r1\_xreal\_0 np\_1 \\ & X3) \wedge (r1\_xreal\_0 X3 (k3\_finseq\_1 X2))) \Rightarrow (r2\_graph\_1 X0 (k7\_partfun1 \\ & (u1\_struct\_0 X0) X1 X3) (k7\_partfun1 (u1\_struct\_0 X0) X1 (k2\_nat\_1 \\ & X3 np\_1)) (k1\_funct\_1 X2 X3)))))) \end{aligned} \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k5\_numbers)\wedge(v7\_ordinal1 X1))\Rightarrow(k2\_nat\_1 X0 X1 = k2\_nat\_1 X1 X0) \quad (28)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0)\wedge(v2\_xxreal\_0 X0))\Rightarrow((\neg v1\_xboole\_0 X0)\wedge((v1\_xxreal\_0 X0)\wedge(\neg v3\_xxreal\_0 X0))) \quad (29)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((v7\_ordinal1 X0)\wedge(\neg v3\_xxreal\_0 X0)) \quad (30)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (31)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(v1\_xreal\_0 X0) \quad (32)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(v1\_finset\_1 X0) \quad (33)$$

Assume the following.

$$\forall X0.(v6\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow(v7\_ordinal1 X1)) \quad (34)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_graph\_1 X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(r1\_graph\_2 X0 (k12\_finseq\_1 (u1\_struct\_0 X0) X1) k1\_xboole\_0))$$