

t21\_graphsp  
(TMHW6NKhAm4rbQxRSKriqNECfwBuD6p7sBB)

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Let  $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_graphsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_graphsp : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k13\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k11\_cqc\_sim1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_graphsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (k1\_funct\_1 (k4\_relat\_1 X1) X0 = X0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X1) \wedge (m1\_funct\_2 X2 X0 X1)) \Rightarrow (\forall X3. (m2\_funct\_2 X3 X0 X1 X2) \Leftrightarrow (m1\_subset\_1 X3 X2)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2. (m2\_finseq\_2 X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (k9\_funct\_2 X0 X1 = k1\_funct\_2 X0 X1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X1 (k1\_funct\_2 X0 X0))\wedge(m1\_subset\_1 X2 X0))\Rightarrow(k4\_graphsp X0 X1 X2 = k1\_funct\_1 X1 X2) \quad (6)$$

Assume the following.

$$\forall X0.k3\_finseq\_2 X0 = k13\_finseq\_1 X0 \quad (7)$$

Assume the following.

$$\forall X0.k11\_cqc\_sim1 X0 = k4\_relat\_1 X0 \quad (8)$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0 (k13\_finseq\_1 X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow(m1\_funct\_2 (k9\_funct\_2 X0 X1) X0 X1) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_funct\_2 X0 X0))\Rightarrow((v1\_funct\_1 (k5\_graphsp X0 X1))\wedge((v1\_funct\_2 (k5\_graphsp X0 X1) k5\_numbers (k1\_funct\_2 X0 X0))\wedge(m1\_subset\_1 (k5\_graphsp X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k1\_funct\_2 X0 X0)))))) \quad (11)$$

Assume the following.

$$\forall X0.m1\_finseq\_2 (k3\_finseq\_2 X0) X0 \quad (12)$$

Assume the following.

$$\forall X0.m1\_subset\_1 (k11\_cqc\_sim1 X0) (k1\_funct\_2 X0 X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_funct\_2 X0 X0))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 k5\_numbers (k1\_funct\_2 X0 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k1\_funct\_2 X0 X0))))))\Rightarrow((X2 = k5\_graphsp X0 X1)\Leftrightarrow((k8\_nat\_1 (k1\_funct\_2 X0 X0) X2 k6\_numbers = k11\_cqc\_sim1 X0)\wedge(\forall X3.(v7\_ordinal1 X3)\Rightarrow(k8\_nat\_1 (k1\_funct\_2 X0 X0) X2 (k1\_nat\_1 X3 np\_1) = k3\_graphsp X0 (k8\_nat\_1 (k1\_funct\_2 X0 X0) X2 X3) X1)))))) \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m2\_funct\_2 X0 (k3\_finseq\_2 k1\_numbers) (k3\_finseq\_2 \\ & k1\_numbers) (k9\_funct\_2 (k3\_finseq\_2 k1\_numbers) (k3\_finseq\_2 \\ & k1\_numbers))) \Rightarrow (\forall X1.(m2\_finseq\_2 X1 k1\_numbers (k3\_finseq\_2 \\ & k1\_numbers)) \Rightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow \\ & (\forall X3.(m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow (k4\_graphsp \\ & (k3\_finseq\_2 k1\_numbers) (k8\_nat\_1 (k1\_funct\_2 (k3\_finseq\_2 \\ & k1\_numbers) (k3\_finseq\_2 k1\_numbers)) (k5\_graphsp (k3\_finseq\_2 \\ & k1\_numbers) X0) k6\_numbers) X1 = X1)))) \end{aligned}$$