

# l27\_jgraph\_4

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  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  $k1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_topmetr : \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_jgraph\_4 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  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  $k12\_euclid : \iota \Rightarrow \iota$  be given. Let  $v2\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (u1\_struct\_0 (k1\_pre\_topc X0 X1) = X1)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow ((k12\_euclid X1 = k6\_numbers) \Rightarrow (X1 = k4\_struct\_0 (k15\_euclid X0)))) \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 \ X0) \wedge \\ & (((v1\_funct\_1 \ X2) \wedge ((v1\_funct\_2 \ X2 \ X0 \ X1) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ X0 \ X1)))))) \wedge (m1\_subset\_1 \ X3 \ X0))) \Rightarrow (k3\_funct\_2 \ X0 \\ & X1 \ X2 \ X3 = k1\_funct\_1 \ X2 \ X3) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1\_xboole\_0 \ X0) \wedge (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ ( \\ & u1\_struct\_0 \ (k15\_euclid \ np\_2)))))) \Rightarrow (((v1\_funct\_1 \ (k2\_partfun1 \\ & (u1\_struct\_0 \ (k15\_euclid \ np\_2)) \ (u1\_struct\_0 \ k3\_topmetr) \ (k1\_jgraph\_4 \\ & np\_2) \ X0)) \wedge ((v1\_funct\_2 \ (k2\_partfun1 \ (u1\_struct\_0 \ (k15\_euclid \\ & np\_2)) \ (u1\_struct\_0 \ k3\_topmetr) \ (k1\_jgraph\_4 \ np\_2) \ X0) \ (u1\_struct\_0 \\ & (k1\_pre\_topc \ (k15\_euclid \ np\_2) \ X0)) \ (u1\_struct\_0 \ k3\_topmetr)) \wedge \\ & ((v5\_pre\_topc \ (k2\_partfun1 \ (u1\_struct\_0 \ (k15\_euclid \ np\_2)) \\ & (u1\_struct\_0 \ k3\_topmetr) \ (k1\_jgraph\_4 \ np\_2) \ X0) \ (k1\_pre\_topc \\ & (k15\_euclid \ np\_2) \ X0) \ k3\_topmetr) \wedge (m1\_subset\_1 \ (k2\_partfun1 \\ & (u1\_struct\_0 \ (k15\_euclid \ np\_2)) \ (u1\_struct\_0 \ k3\_topmetr) \ (k1\_jgraph\_4 \\ & np\_2) \ X0) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (u1\_struct\_0 \ (k1\_pre\_topc \\ & (k15\_euclid \ np\_2) \ X0)) \ (u1\_struct\_0 \ k3\_topmetr)))))) \wedge (\forall X1. \\ & (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ (k1\_pre\_topc \ (k15\_euclid \ np\_2) \\ & X0))) \Rightarrow (k1\_funct\_1 \ (k2\_partfun1 \ (u1\_struct\_0 \ (k15\_euclid \ np\_2)) \\ & (u1\_struct\_0 \ k3\_topmetr) \ (k1\_jgraph\_4 \ np\_2) \ X0) \ X1 = k1\_funct\_1 \\ & (k1\_jgraph\_4 \ np\_2) \ X1))) \end{aligned} \quad (9)$$

Assume the following.

$$v6\_membered \ k4\_ordinal1 \quad (10)$$

Assume the following.

$$\forall X0. (l1\_rltopsp1 \ X0) \Rightarrow ((l1\_rlvect\_1 \ X0) \wedge (l1\_pre\_topc \ X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7\_ordinal1 \ X0) \Rightarrow ((v1\_funct\_1 \ (k1\_jgraph\_4 \ X0)) \wedge \\ & ((v1\_funct\_2 \ (k1\_jgraph\_4 \ X0) \ (u1\_struct\_0 \ (k15\_euclid \ X0)) \ ( \\ & u1\_struct\_0 \ k3\_topmetr)) \wedge (m1\_subset\_1 \ (k1\_jgraph\_4 \ X0) \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ (u1\_struct\_0 \ (k15\_euclid \ X0)) \ (u1\_struct\_0 \ k3\_topmetr)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((v5\_rltopsp1\ (k15\_euclid\ X0))\wedge (l1\_rltopsp1\ (k15\_euclid\ X0))) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(( \\ v1\_funct\_2\ X1\ (u1\_struct\_0\ (k15\_euclid\ X0))\ (u1\_struct\_0\ k3\_topmetr))\wedge \\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k15\_euclid \\ X0))\ (u1\_struct\_0\ k3\_topmetr))))))\Rightarrow((X1 = k1\_jgraph\_4\ X0)\Leftrightarrow(\forall X2. \\ (m1\_subset\_1\ X2\ (u1\_struct\_0\ (k15\_euclid\ X0)))\Rightarrow(k3\_funct\_2\ ( \\ u1\_struct\_0\ (k15\_euclid\ X0))\ (u1\_struct\_0\ k3\_topmetr)\ X1\ X2 = k12\_euclid \\ X2)))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v6\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow (v7\_ordinal1\ X1)) \quad (15)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ ( \\ u1\_struct\_0\ (k15\_euclid\ np\_2))))))\Rightarrow(\forall X1.((v1\_funct\_1 \\ X1)\wedge((v1\_funct\_2\ X1\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2) \\ X0))\ (u1\_struct\_0\ k3\_topmetr))\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X0)) \\ (u1\_struct\_0\ k3\_topmetr))))))\Rightarrow(((X1 = k2\_partfun1\ (u1\_struct\_0 \\ (k15\_euclid\ np\_2))\ (u1\_struct\_0\ k3\_topmetr)\ (k1\_jgraph\_4\ np\_2) \\ X0)\wedge(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ (k15\_euclid\ np\_2))))\Rightarrow \\ (\neg(X2 \in u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X0))\wedge(X2 = \\ k4\_struct\_0\ (k15\_euclid\ np\_2))))))\Rightarrow(\forall X2.(m1\_subset\_1 \\ X2\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X0)))\Rightarrow(k3\_funct\_2 \\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X0))\ (u1\_struct\_0 \\ k3\_topmetr)\ X1\ X2\neq k6\_numbers)))) \end{aligned}$$