

# l16\_jgraph\_3

(TMHAqrjwfyON5xN1ETVsjtGofKxUKiu5D7D)

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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  $k3\_pscomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_pscomp\_1 : \iota$  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  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $m1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid \\
& \quad np\_2)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 \\
& \quad (k1\_pre\_topc (k15\_euclid np\_2) X0)) (u1\_struct\_0 k3\_topmetr))) \wedge \\
& \quad (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k1\_pre\_topc \\
& \quad (k15\_euclid np\_2) X0)) (u1\_struct\_0 k3\_topmetr)))))) \Rightarrow ((\forall X2. \\
& \quad (m1\_subset\_1 X2 (u1\_struct\_0 (k1\_pre\_topc (k15\_euclid np\_2) \\
& \quad X0))) \Rightarrow (k1\_funct\_1 X1 X2 = k1\_funct\_1 k5\_pscomp\_1 X2)) \Rightarrow (v5\_pre\_topc \\
& \quad X1 (k1\_pre\_topc (k15\_euclid np\_2) X0) k3\_topmetr)))
\end{aligned} \tag{1}$$

Assume the following.

$$u1\_struct\_0 k3\_topmetr = k1\_numbers \tag{2}$$

Assume the following.

$$\begin{aligned}
& ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\
& ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers))
\end{aligned} \tag{3}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(k3\_funct\_2 X0 \\ & X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 ( \\ & u1\_struct\_0 (k15\_euclid np\_2))))))\Rightarrow(\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 (k1\_pre\_topc (k15\_euclid np\_2) X0)))\Rightarrow(k3\_funct\_2 \\ & (u1\_struct\_0 (k1\_pre\_topc (k15\_euclid np\_2) X0)) k1\_numbers \\ & (k3\_pscomp\_1 (k15\_euclid np\_2) k5\_pscomp\_1 X0) X1 = k1\_funct\_1 \\ & k5\_pscomp\_1 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((\neg v2\_struct\_0 (k15\_euclid X0))\wedge (v5\_rltopsp1 (k15\_euclid X0))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_pre\_topc X0))\wedge \\ & ((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))))))\Rightarrow((\neg v2\_struct\_0 (k1\_pre\_topc X0 X1))\wedge(v1\_pre\_topc (k1\_pre\_topc \\ & X0 X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(\forall X1.(m1\_pre\_topc X1 X0)\Rightarrow (l1\_pre\_topc X1)) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l1\_pre\_topc X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(l1\_struct\_0 X0) \quad (13)$$

Assume the following.

$$(v1\_funct\_1\ k5\_pscomp\_1) \wedge ((v1\_funct\_2\ k5\_pscomp\_1\ (u1\_struct\_0\ (k15\_euclid\ np\_2))\ k1\_numbers) \wedge (m1\_subset\_1\ k5\_pscomp\_1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k15\_euclid\ np\_2))\ k1\_numbers)))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge (l1\_pre\_topc\ X0)) \wedge (((v1\_funct\_1\ X1) \wedge ((v1\_funct\_2\ X1\ (u1\_struct\_0\ X0)\ k1\_numbers) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ k1\_numbers)))))) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))) \Rightarrow ((v1\_funct\_1\ (k3\_pscomp\_1\ X0\ X1\ X2)) \wedge ((v1\_funct\_2\ (k3\_pscomp\_1\ X0\ X1\ X2)\ (u1\_struct\_0\ (k1\_pre\_topc\ X0\ X2))\ k1\_numbers) \wedge (m1\_subset\_1\ (k3\_pscomp\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k1\_pre\_topc\ X0\ X2))\ k1\_numbers)))))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((l1\_pre\_topc\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow ((v1\_pre\_topc\ (k1\_pre\_topc\ X0\ X1)) \wedge (m1\_pre\_topc\ (k1\_pre\_topc\ X0\ X1)\ X0)) \quad (16)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v5\_rltopsp1\ (k15\_euclid\ X0)) \wedge (l1\_rltopsp1\ (k15\_euclid\ X0))) \quad (17)$$

Assume the following.

$$\forall X0.(v6\_membered\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v7\_ordinal1\ X1)) \quad (18)$$

### Theorem 1

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k15\_euclid\ np\_2)))))) \Rightarrow ((v1\_funct\_1\ (k3\_pscomp\_1\ (k15\_euclid\ np\_2)\ k5\_pscomp\_1\ X0)) \wedge ((v1\_funct\_2\ (k3\_pscomp\_1\ (k15\_euclid\ np\_2)\ k5\_pscomp\_1\ X0)\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X0))\ (u1\_struct\_0\ k3\_topmetr))) \wedge ((v5\_pre\_topc\ (k3\_pscomp\_1\ (k15\_euclid\ np\_2)\ k5\_pscomp\_1\ X0)\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X0)\ k3\_topmetr) \wedge (m1\_subset\_1\ (k3\_pscomp\_1\ (k15\_euclid\ np\_2)\ k5\_pscomp\_1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X0))\ (u1\_struct\_0\ k3\_topmetr)))))) \quad (19)$$