

# l15\_jgraph\_3

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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  $k1\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k3\_pscomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_pscomp\_1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  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. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  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.

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((X0 \in k3\_xboole\_0 (k9\_xtuple\_0 X2) X1) \Rightarrow (k1\_funct\_1 (k5\_relat\_1 X2 X1) X0 = k1\_funct\_1 X2 X0)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1)\Rightarrow((v1\_xboole\_0 X1)\vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$((v2\_xxreal\_0 np\_2)\wedge(m2\_subset\_1 np\_2 k1\_numbers k5\_numbers))\wedge ((m1\_subset\_1 np\_2 k5\_numbers)\wedge(m1\_subset\_1 np\_2 k1\_numbers)) \quad (6)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l1\_pre\_topc X0))\wedge(((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (u1\_struct\_0 X0) k1\_numbers)\wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) k1\_numbers))))))\wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow(k3\_pscomp\_1 X0 X1 X2 = k5\_relat\_1 X1 X2) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(k3\_funct\_2 X0 X1 X2 X3 = k1\_funct\_1 X2 X3) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v4\_relat\_1 X1 X0))\Rightarrow(k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (10)$$

Assume the following.

$$k1\_relset\_1 (u1\_struct\_0 (k15\_euclid np\_2)) k5\_pscomp\_1 = u1\_struct\_0 (k15\_euclid np\_2) \quad (11)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (12)$$

Assume the following.

$$\forall X0.((v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.\exists X1.m1\_subset\_1 X1 X0 \quad (14)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0) \Rightarrow ((l1\_rlvect\_1 X0) \wedge (l1\_pre\_topc X0)) \quad (15)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (16)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1 k5\_pscomp\_1) \wedge ((v1\_funct\_2 k5\_pscomp\_1 (u1\_struct\_0 \\ & (k15\_euclid np\_2)) k1\_numbers) \wedge (m1\_subset\_1 k5\_pscomp\_1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)) k1\_numbers)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (l1\_pre\_topc \\ & X0)) \wedge (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) k1\_numbers) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) k1\_numbers)))))) \wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow ((v1\_funct\_1 \\ & (k3\_pscomp\_1 X0 X1 X2)) \wedge ((v1\_funct\_2 (k3\_pscomp\_1 X0 X1 X2) (u1\_struct\_0 \\ & (k1\_pre\_topc X0 X2)) k1\_numbers) \wedge (m1\_subset\_1 (k3\_pscomp\_1 X0 \\ & X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k1\_pre\_topc X0 \\ & X2)) k1\_numbers)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((v5\_rltopsp1 (k15\_euclid X0)) \wedge (l1\_rltopsp1 (k15\_euclid X0))) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k3\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (X3 \in X1))) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (22)$$

Assume the following.

$$\forall X0.(v6\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v7\_ordinal1 X1)) \quad (23)$$

**Theorem 1**

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