

t96\_jgraph\_4  
(TMQ5CpnvVaEUbDRMBhwQzugJBgXVkg7cRE2)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  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  $v1\_funct\_1 : \iota \Rightarrow o$  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  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_jgraph\_4 : \iota \Rightarrow \iota$  be given. Let  $k8\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_euclid : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  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  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given.

Let  $v6\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow \\
& (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 (k1\_pre\_topc \\
& (k15\_euclid np\_2) X1)) (u1\_struct\_0 (k1\_pre\_topc (k15\_euclid \\
& np\_2) X2)))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& (k1\_pre\_topc (k15\_euclid np\_2) X1)) (u1\_struct\_0 (k1\_pre\_topc \\
& (k15\_euclid np\_2) X2)))))) \Rightarrow (((X3 = k2\_partfun1 (u1\_struct\_0 \\
& (k15\_euclid np\_2)) (u1\_struct\_0 (k15\_euclid np\_2)) (k7\_jgraph\_4 \\
& X0) X1) \wedge ((X2 = k8\_struct\_0 (k15\_euclid np\_2)) \wedge (X1 = ReplSep (toset \\
& (\lambda X4 : \iota.m1\_subset\_1 X4 (u1\_struct\_0 (k15\_euclid np\_2)))) \\
& (\lambda X4 : \iota.(r1\_xxreal\_0 (k17\_euclid X4) k6\_numbers) \wedge (X4 \neq k4\_struct\_0 \\
& (k15\_euclid np\_2)) (\lambda X4 : \iota.X4)))) \Rightarrow ((r1\_xxreal\_0 X0 (k1\_real\_1 \\
& np\_1)) \vee ((r1\_xxreal\_0 np\_1 X0) \vee (v5\_pre\_topc X3 (k1\_pre\_topc \\
& (k15\_euclid np\_2) X1) (k1\_pre\_topc (k15\_euclid np\_2) X2)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_pre\_topc X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0))) \Rightarrow (u1\_struct\_0 (k1\_pre\_topc X0 X1) = X1))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v2\_pre\_topc X0) \wedge (l1\_pre\_topc X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 (k1\_pre\_topc X0 X2)))) \Rightarrow \\
& (((X1 = X3) \wedge (r1\_tarski X1 X2)) \Rightarrow (k1\_pre\_topc X0 X1 = k1\_pre\_topc \\
& (k1\_pre\_topc X0 X2) X3))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski \\
& X0 X1)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((r1\_tarski X0 X1) \wedge (r1\_tarski \\
& X1 X2)) \Rightarrow (r1\_tarski X0 X2)
\end{aligned} \tag{5}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.r1\_tarski X0 X0 \tag{7}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & ((v2\_pre\_topc\ (k15\_euclid\ X0)) \wedge \\ & ((v13\_algstr\_0\ (k15\_euclid\ X0)) \wedge ((v2\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v3\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v4\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v5\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v6\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v7\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v8\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & (v5\_rltopsp1\ (k15\_euclid\ X0)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1\ X0) \Rightarrow ((l1\_rlvect\_1\ X0) \wedge (l1\_pre\_topc\ X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v5\_rltopsp1\ (k15\_euclid\ X0)) \wedge (l1\_rltopsp1\ (k15\_euclid\ X0))) \quad (10)$$

Assume the following.

$$\forall X0.(v6\_membered\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v7\_ordinal1\ X1)) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k5\_numbers)) \Rightarrow (v6\_membered\ X0) \quad (12)$$

### Theorem 1

$$\begin{aligned} \forall X0.(m1\_subset\_1\ X0\ k1\_numbers) \Rightarrow & (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k15\_euclid\ np\_2)))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X1)))) \Rightarrow (\forall X3. ((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ ( \\ & u1\_struct\_0\ (k1\_pre\_topc\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X1) \\ & X2))\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X1))) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (k1\_pre\_topc\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X1)\ X2))\ (u1\_struct\_0\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X1)))))) \Rightarrow (((X3 = k2\_partfun1\ (u1\_struct\_0\ (k15\_euclid\ np\_2))\ (u1\_struct\_0\ (k15\_euclid\ np\_2))\ (k7\_jgraph\_4\ X0)\ X2) \wedge ((X1 = k8\_struct\_0\ (k15\_euclid\ np\_2)) \wedge (X2 = ReplSep\ (toset\ (\lambda X4 : \iota.m1\_subset\_1\ X4\ (u1\_struct\_0\ (k15\_euclid\ np\_2))))\ (\lambda X4 : \iota.(r1\_xxreal\_0\ (k17\_euclid\ X4)\ k6\_numbers) \wedge (X4 \neq k4\_struct\_0\ (k15\_euclid\ np\_2)))\ (\lambda X4 : \iota.X4)))) \Rightarrow ((r1\_xxreal\_0\ X0\ (k1\_real\_1\ np\_1)) \vee ((r1\_xxreal\_0\ np\_1\ X0) \vee (v5\_pre\_topc\ X3\ (k1\_pre\_topc\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X1)\ X2)\ (k1\_pre\_topc\ (k15\_euclid\ np\_2)\ X1)))))) \end{aligned}$$