

## l52\_jgraph\_2

(TMHiTZuaFUM6fyGZRieQpP92cq9VunsrRXt)

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Let  $v4\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k18\_euclid : \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $k17\_euclid : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k12\_euclid : \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0 : \iota \Rightarrow \iota. \forall X1 : \iota \Rightarrow \iota. ((\forall X2. v1\_xxreal\_0 \\
 & (X1 X2)) \wedge (\forall X2. v1\_xxreal\_0 (X0 X2))) \Rightarrow (((\forall X2. (m1\_subset\_1 \\
 & X2 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow (\forall X3. (m1\_subset\_1 \\
 & X3 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow ((X1 (k5\_algstr\_0 (k15\_euclid \\
 & np\_2) X2 X3) = k6\_xcmplx\_0 (X1 X2) (X1 X3)) \wedge (X0 (k5\_algstr\_0 (k15\_euclid \\
 & np\_2) X2 X3) = k6\_xcmplx\_0 (X0 X2) (X0 X3)))))) \wedge (\forall X2. (m1\_subset\_1 \\
 & X2 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow (\forall X3. (m1\_subset\_1 \\
 & X3 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow (k5\_square\_1 (k12\_euclid \\
 & (k5\_algstr\_0 (k15\_euclid np\_2) X2 X3)) = k2\_xcmplx\_0 (k3\_square\_1 \\
 & (X1 (k5\_algstr\_0 (k15\_euclid np\_2) X2 X3))) (k3\_square\_1 (X0 ( \\
 & k5\_algstr\_0 (k15\_euclid np\_2) X2 X3)))))) \Rightarrow ((v4\_pre\_topc (ReplSep \\
 & (toset (\lambda X2 : \iota. m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid np\_2)))) \\
 & (\lambda X2 : \iota. r1\_xxreal\_0 (X1 X2) (X0 X2)) (\lambda X2 : \iota. X2)) (k15\_euclid \\
 & np\_2)) \wedge (m1\_subset\_1 (ReplSep (toset (\lambda X2 : \iota. m1\_subset\_1 \\
 & X2 (u1\_struct\_0 (k15\_euclid np\_2)))) (\lambda X2 : \iota. r1\_xxreal\_0 \\
 & (X1 X2) (X0 X2)) (\lambda X2 : \iota. X2)) (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid \\
 & np\_2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xxreal\_0 \\
 & X1)) \Rightarrow (k9\_real\_1 X0 X1 = k6\_xcmplx\_0 X0 X1)
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k7\_real\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(k5\_square\_1 X0 = k3\_square\_1 X0) \quad (4)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(k1\_real\_1 X0 = k4\_xcmplx\_0 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} &\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ &(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ &(k5\_square\_1 (k12\_euclid (k5\_algstr\_0 (k15\_euclid np\_2) X0 X1)) = \\ &k7\_real\_1 (k5\_square\_1 (k18\_euclid (k5\_algstr\_0 (k15\_euclid \\ &np\_2) X0 X1))) (k5\_square\_1 (k1\_real\_1 (k17\_euclid (k5\_algstr\_0 \\ &(k15\_euclid np\_2) X0 X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} &\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ &(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ &((k18\_euclid (k5\_algstr\_0 (k15\_euclid np\_2) X0 X1) = k9\_real\_1 \\ &(k18\_euclid X0) (k18\_euclid X1))\wedge(k1\_real\_1 (k17\_euclid (k5\_algstr\_0 \\ &(k15\_euclid np\_2) X0 X1)) = k9\_real\_1 (k1\_real\_1 (k17\_euclid X0)) \\ &(k1\_real\_1 (k17\_euclid X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0))\wedge (v1\_xreal\_0 (k4\_xcmplx\_0 X0))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(m1\_subset\_1 (k9\_real\_1 X0 X1) k1\_numbers) \quad (9)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(m1\_subset\_1 (k5\_square\_1 X0) k1\_numbers) \quad (10)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(m1\_subset\_1 (k1\_real\_1 X0) k1\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow (m1\_subset\_1 (k18\_euclid X0) k1\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow (m1\_subset\_1 (k17\_euclid X0) k1\_numbers) \quad (13)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (14)$$

**Theorem 1**

$$(v4\_pre\_topc (ReplSep (toset (\lambda X0 : \iota.m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))) (\lambda X0 : \iota.r1\_xxreal\_0 (k18\_euclid X0) (k1\_real\_1 (k17\_euclid X0))) (\lambda X0 : \iota.X0) (k15\_euclid np\_2))) \wedge (m1\_subset\_1 (ReplSep (toset (\lambda X0 : \iota.m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))) (\lambda X0 : \iota.r1\_xxreal\_0 (k18\_euclid X0) (k1\_real\_1 (k17\_euclid X0))) (\lambda X0 : \iota.X0) (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2))))))$$