

# l69\_toprealb (TM- SXL7cDRLrgmkxsPYXs57KbAnaLZKLn8zk)

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_toprealb : \iota$  be given. Let  $k19\_euclid : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k1\_fcont\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k32\_sin\_cos : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k19\_sin\_cos : \iota$  be given. Let  $k16\_sin\_cos : \iota$  be given. Let  $k20\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  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  $k21\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k18\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_topalg\_2 : \iota$  be given. Let  $k8\_toprealb : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow (k20\_sin\_cos (k2\_xcmplx\_0 (k3\_xcmplx\_0 X0 X1) \\ & X2) = k1\_funct\_1 (k1\_partfun1 k1\_numbers k1\_numbers k1\_numbers \\ & k1\_numbers (k1\_fcont\_1 X0 X2) k19\_sin\_cos) X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow (k17\_sin\_cos (k2\_xcmplx\_0 (k3\_xcmplx\_0 X0 X1) \\ & X2) = k1\_funct\_1 (k1\_partfun1 k1\_numbers k1\_numbers k1\_numbers \\ & k1\_numbers (k1\_fcont\_1 X0 X2) k16\_sin\_cos) X1))) \end{aligned} \quad (2)$$

Assume the following.

$$m1\_subset\_1 k1\_xboole\_0 k4\_ordinal1 \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k2\_xcmplx\_0 X0 k6\_numbers = X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k1\_numbers) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (k8\_real\_1 \ X0 \ X1 = k3\_xcmplx\_0 \ X0 \ X1) \quad (6)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (7)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (k21\_sin\_cos \ X0 = k20\_sin\_cos \ X0) \quad (9)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (k18\_sin\_cos \ X0 = k17\_sin\_cos \ X0) \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k1\_numbers) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow (m1\_subset\_1 \ (k8\_real\_1 \ X0 \ X1) \ k1\_numbers) \quad (11)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (12)$$

Assume the following.

$$m1\_subset\_1 \ k32\_sin\_cos \ k1\_numbers \quad (13)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1 \ k12\_toprealb) \wedge ((v1\_funct\_2 \ k12\_toprealb \ (u1\_struct\_0 \\ & \quad k2\_topalg\_2) \ (u1\_struct\_0 \ (k8\_toprealb \ np\_2))) \wedge (m1\_subset\_1 \\ & \quad k12\_toprealb \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (u1\_struct\_0 \ k2\_topalg\_2) \\ & \quad \quad (u1\_struct\_0 \ (k8\_toprealb \ np\_2)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_funct\_1 \ X0) \wedge ((v1\_funct\_2 \ X0 \ (u1\_struct\_0 \ k2\_topalg\_2) \\ & \quad (u1\_struct\_0 \ (k8\_toprealb \ np\_2))) \wedge (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \\ & \quad \quad (k2\_zfmisc\_1 \ (u1\_struct\_0 \ k2\_topalg\_2) \ (u1\_struct\_0 \ (k8\_toprealb \\ & \quad \quad \quad np\_2))))))) \Rightarrow ((X0 = k12\_toprealb) \Leftrightarrow (\forall X1. (v1\_xreal\_0 \ X1) \Rightarrow \\ & \quad (k1\_funct\_1 \ X0 \ X1 = k19\_euclid \ (k21\_sin\_cos \ (k8\_real\_1 \ (k8\_real\_1 \\ & \quad \quad np\_2 \ k32\_sin\_cos) \ X1)) \ (k18\_sin\_cos \ (k8\_real\_1 \ (k8\_real\_1 \ np\_2 \\ & \quad \quad \quad k32\_sin\_cos) \ X1)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(v1\_xreal\_0 X1))\Rightarrow(k8\_real\_1 X0 X1 = k8\_real\_1 X1 X0) \quad (16)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))\Rightarrow(v3\_membered X0) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (18)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xcmplx\_0 X0) \quad (19)$$

Assume the following.

$$\forall X0.(v3\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow(v1\_xreal\_0 X1)) \quad (20)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(k1\_funct\_1 k12\_toprealb X0 = k19\_euclid (k1\_funct\_1 (k1\_partfun1 k1\_numbers k1\_numbers k1\_numbers k1\_numbers (k1\_fcont\_1 (k8\_real\_1 np\_2 k32\_sin\_cos) k6\_numbers) k19\_sin\_cos) X0) (k1\_funct\_1 (k1\_partfun1 k1\_numbers k1\_numbers k1\_numbers k1\_numbers (k1\_fcont\_1 (k8\_real\_1 np\_2 k32\_sin\_cos) k6\_numbers) k16\_sin\_cos) X0))$$