

t67\_csspace  
(TMS68GZJLSc7hyk4YH4Ke6kP5uMvrATwJpD)

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Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $v2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v2\_csspace : \iota \Rightarrow o$  be given. Let  $l1\_csspace : \iota \Rightarrow o$  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  $k5\_numbers : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_clvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_csspace : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k2\_normsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k1\_normsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_clvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\ & X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \tag{2}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ & X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\ & ((v2\_clvect\_1 X0)\wedge((v3\_clvect\_1 X0)\wedge((v4\_clvect\_1 X0)\wedge((v5\_clvect\_1 \\ & X0)\wedge((v2\_csspace X0)\wedge(l1\_csspace X0))))))))))\wedge(((v1\_funct\_1 \\ & X1)\wedge((v1\_funct\_2 X1 k5\_numbers (u1\_struct\_0 X0))\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0))))))\wedge \\ & ((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 k5\_numbers (u1\_struct\_0 X0))\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\ & X0))))))\Rightarrow(k16\_csspace X0 X1 X2 = k2\_normsp\_1 X0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(v1\_xcmplx\_0 (k2\_xcmplx\_0 X0 X1)) \quad (6)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(l1\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_csspace X0)\Rightarrow(l1\_clvect\_1 X0) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_clvect\_1 X0)\Rightarrow(l2\_algstr\_0 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ & X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\ & ((v2\_clvect\_1 X0)\wedge((v3\_clvect\_1 X0)\wedge((v4\_clvect\_1 X0)\wedge((v5\_clvect\_1 \\ & X0)\wedge(l1\_clvect\_1 X0))))))))))\wedge(((v1\_funct\_1 X1)\wedge((v1\_funct\_2 \\ & X1 k5\_numbers (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0))))))\wedge(v1\_xcmplx\_0 \\ & X2))\Rightarrow((v1\_funct\_1 (k6\_clvect\_1 X0 X1 X2))\wedge((v1\_funct\_2 (k6\_clvect\_1 \\ & X0 X1 X2) k5\_numbers (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (k6\_clvect\_1 \\ & X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 \ X0) \wedge (l1\_struct\_0 \\ & \ X0)) \wedge (((v1\_funct\_1 \ X1) \wedge ((v1\_funct\_2 \ X1 \ k5\_numbers \ (u1\_struct\_0 \\ & \ X0)) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \\ & \ X0)))))) \wedge (m1\_subset\_1 \ X2 \ k5\_numbers))) \Rightarrow (m1\_subset\_1 \ (k1\_normsp\_1 \\ & \ X0 \ X1 \ X2) \ (u1\_struct\_0 \ X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 \ X0) \wedge ((v13\_algstr\_0 \\ & \ X0) \wedge ((v2\_rlvect\_1 \ X0) \wedge ((v3\_rlvect\_1 \ X0) \wedge ((v4\_rlvect\_1 \ X0) \wedge \\ & \ ((v2\_clvect\_1 \ X0) \wedge ((v3\_clvect\_1 \ X0) \wedge ((v4\_clvect\_1 \ X0) \wedge ((v5\_clvect\_1 \\ & \ X0) \wedge ((v2\_csspace \ X0) \wedge (l1\_csspace \ X0)))))))))) \wedge (((v1\_funct\_1 \\ & \ X1) \wedge ((v1\_funct\_2 \ X1 \ k5\_numbers \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \\ & \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \ X0)))))) \wedge \\ & \ ((v1\_funct\_1 \ X2) \wedge ((v1\_funct\_2 \ X2 \ k5\_numbers \ (u1\_struct\_0 \ X0)) \wedge \\ & \ (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \\ & \ X0)))))) \Rightarrow ((v1\_funct\_1 \ (k16\_csspace \ X0 \ X1 \ X2)) \wedge ((v1\_funct\_2 \\ & \ (k16\_csspace \ X0 \ X1 \ X2) \ k5\_numbers \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \\ & \ (k16\_csspace \ X0 \ X1 \ X2) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \\ & \ X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge (l1\_clvect\_1 \ X0)) \Rightarrow ((v3\_clvect\_1 \\ & \ X0) \Leftrightarrow (\forall X1. (v1\_xcmplx\_0 \ X1) \Rightarrow (\forall X2. (v1\_xcmplx\_0 \ X2) \Rightarrow \\ & \ (\forall X3. (m1\_subset\_1 \ X3 \ (u1\_struct\_0 \ X0)) \Rightarrow (k1\_clvect\_1 \ X0 \\ & \ X3 \ (k2\_xcmplx\_0 \ X1 \ X2) = k1\_algstr\_0 \ X0 \ (k1\_clvect\_1 \ X0 \ X3 \ X1) \ (k1\_clvect\_1 \\ & \ X0 \ X3 \ X2)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge (l2\_algstr\_0 \ X0)) \Rightarrow (\forall X1. \\ & \ ((v1\_funct\_1 \ X1) \wedge ((v1\_funct\_2 \ X1 \ k5\_numbers \ (u1\_struct\_0 \ X0)) \wedge \\ & \ (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \\ & \ X0)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 \ X2) \wedge ((v1\_funct\_2 \ X2 \ k5\_numbers \\ & \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ & \ k5\_numbers \ (u1\_struct\_0 \ X0)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 \ X3) \wedge \\ & \ ((v1\_funct\_2 \ X3 \ k5\_numbers \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \ X3 \\ & \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \ X0)))))) \Rightarrow \\ & \ ((X3 = k2\_normsp\_1 \ X0 \ X1 \ X2) \Leftrightarrow (\forall X4. (m2\_subset\_1 \ X4 \ k1\_numbers \\ & \ k5\_numbers) \Rightarrow (k1\_normsp\_1 \ X0 \ X3 \ X4 = k1\_algstr\_0 \ X0 \ (k1\_normsp\_1 \\ & \ X0 \ X1 \ X4) \ (k1\_normsp\_1 \ X0 \ X2 \ X4)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_clvect\_1 X0) \wedge \\
& ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge ((v5\_clvect\_1 X0) \wedge (l1\_clvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers \\
& (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k5\_numbers (u1\_struct\_0 X0)))))) \Rightarrow (\forall X2.(v1\_xcmplx\_0 X2) \Rightarrow \\
& (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 k5\_numbers (u1\_struct\_0 \\
& X0)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 \\
& X0)))))) \Rightarrow ((X3 = k6\_clvect\_1 X0 X1 X2) \Leftrightarrow (\forall X4.(m2\_subset\_1 \\
& X4 k1\_numbers k5\_numbers) \Rightarrow (k1\_normsp\_1 X0 X3 X4 = k1\_clvect\_1 X0 \\
& (k1\_normsp\_1 X0 X1 X4) X2))))))
\end{aligned} \tag{17}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \tag{18}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (\forall X2. \\
& ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v2\_rlvect\_1 X2) \wedge (( \\
& v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge ((v2\_clvect\_1 X2) \wedge ((v3\_clvect\_1 \\
& X2) \wedge ((v4\_clvect\_1 X2) \wedge ((v5\_clvect\_1 X2) \wedge ((v2\_csspace X2) \wedge ( \\
& l1\_csspace X2)))))))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\
& X3 k5\_numbers (u1\_struct\_0 X2)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X2)))))) \Rightarrow (r2\_funct\_2 k5\_numbers \\
& (u1\_struct\_0 X2) (k6\_clvect\_1 X2 X3 (k2\_xcmplx\_0 X0 X1)) (k16\_csspace \\
& X2 (k6\_clvect\_1 X2 X3 X0) (k6\_clvect\_1 X2 X3 X1))))))
\end{aligned}$$