

t80\_fvaluat1  
(TMK1ByqNUihpAh7tdNx7foYe9czRccYC6Ff)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  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  $v1\_realset2 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_fvaluat1 : \iota \Rightarrow o$  be given. Let  $v4\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u3\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v3\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
& (v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (v1\_realset2 X0) \wedge (l6\_algstr\_0 \\
& X0)))))))) \Rightarrow (\forall X1. (m1\_fvaluat1 X1 X0) \Rightarrow ((v3\_fvaluat1 \\
& X0) \Rightarrow (\forall X2. ((\neg v1\_xboole\_0 X2) \wedge ((v1\_subset\_1 X2 (u1\_struct\_0 \\
& (k7\_fvaluat1 X0 X1))) \wedge ((v1\_ideal\_1 X2 (k7\_fvaluat1 X0 X1)) \wedge (( \\
& v2\_ideal\_1 X2 (k7\_fvaluat1 X0 X1)) \wedge ((v3\_ideal\_1 X2 (k7\_fvaluat1 \\
& X0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 (k7\_fvaluat1 \\
& X0 X1)))))))) \Rightarrow (r1\_tarski X2 (k8\_fvaluat1 X0 X1))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\ (v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge (l6\_algstr\_0 \\ X0)))))))))) \Rightarrow (\forall X1.(m1\_fvaluat1 X1 X0) \Rightarrow (\neg(v3\_fvaluat1 \\ X0) \wedge (k5\_struct\_0 X0 \in k8\_fvaluat1 X0 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (3)$$

Assume the following.

$$\forall X0.(l3\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (u3\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge \\ ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 \\ X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge \\ (l6\_algstr\_0 X0)))))))))) \wedge (m1\_fvaluat1 X1 X0)) \Rightarrow ((\neg v1\_xboole\_0 \\ (k8\_fvaluat1 X0 X1)) \wedge ((v1\_ideal\_1 (k8\_fvaluat1 X0 X1) (k7\_fvaluat1 \\ X0 X1)) \wedge ((v2\_ideal\_1 (k8\_fvaluat1 X0 X1) (k7\_fvaluat1 X0 X1)) \wedge \\ ((v3\_ideal\_1 (k8\_fvaluat1 X0 X1) (k7\_fvaluat1 X0 X1)) \wedge (m1\_subset\_1 \\ (k8\_fvaluat1 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 (k7\_fvaluat1 X0 \\ X1)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge \\ & ((v13\_algstr\_0 X0) \wedge (v3\_group\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (v2\_rlvect\_1 \\ & X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v1\_realset2 X0) \wedge \\ & (l6\_algstr\_0 X0)))))) \wedge (m1\_fvaluat1 X1 X0) \Rightarrow ((\neg v2\_struct\_0 \\ & (k7\_fvaluat1 X0 X1)) \wedge (\neg v6\_struct\_0 (k7\_fvaluat1 X0 X1)) \wedge (v13\_algstr\_0 \\ & (k7\_fvaluat1 X0 X1)) \wedge (v36\_algstr\_0 (k7\_fvaluat1 X0 X1)) \wedge (v3\_group\_1 \\ & (k7\_fvaluat1 X0 X1)) \wedge (v5\_group\_1 (k7\_fvaluat1 X0 X1)) \wedge (v4\_vectsp\_1 \\ & (k7\_fvaluat1 X0 X1)) \wedge (v5\_vectsp\_1 (k7\_fvaluat1 X0 X1)) \wedge (v2\_rlvect\_1 \\ & (k7\_fvaluat1 X0 X1)) \wedge (v3\_rlvect\_1 (k7\_fvaluat1 X0 X1)) \wedge (v4\_rlvect\_1 \\ & (k7\_fvaluat1 X0 X1)) \wedge (l6\_algstr\_0 (k7\_fvaluat1 X0 X1)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow ((v1\_subset\_1 X1 X0) \Leftrightarrow (X1 \neq X0)) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow ((v3\_ring\_1 \\ & X1 X0) \Leftrightarrow (\forall X2. ((\neg v1\_xboole\_0 X2) \wedge (v1\_ideal\_1 X2 X0) \wedge (( \\ & v2\_ideal\_1 X2 X0) \wedge (v3\_ideal\_1 X2 X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)))))) \Rightarrow (\neg (r1\_tarski X1 X2) \wedge ((X2 \neq X1) \wedge (v1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge (v13\_algstr\_0 \\ & X0) \wedge (v3\_group\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (v2\_rlvect\_1 X0) \wedge \\ & (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v1\_realset2 X0) \wedge (l6\_algstr\_0 \\ & X0)))))) \Rightarrow (\forall X1. (m1\_fvaluat1 X1 X0) \Rightarrow ((v3\_fvaluat1 \\ & X0) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 X2) \wedge (\neg v6\_struct\_0 X2) \wedge (v13\_algstr\_0 \\ & X2) \wedge (v36\_algstr\_0 X2) \wedge (v3\_group\_1 X2) \wedge (v5\_group\_1 X2) \wedge \\ & (v4\_vectsp\_1 X2) \wedge (v5\_vectsp\_1 X2) \wedge (v2\_rlvect\_1 X2) \wedge (v3\_rlvect\_1 \\ & X2) \wedge (v4\_rlvect\_1 X2) \wedge (l6\_algstr\_0 X2)))))) \Rightarrow ((X2 = k7\_fvaluat1 \\ & X0 X1) \Leftrightarrow ((u1\_struct\_0 X2 = k6\_fvaluat1 X0 X1) \wedge ((u1\_algstr\_0 X2 = \\ & k2\_partfun1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) ( \\ & u1\_struct\_0 X0) (u1\_algstr\_0 X0) (k2\_zfmisc\_1 (k6\_fvaluat1 X0 \\ & X1) (k6\_fvaluat1 X0 X1))) \wedge ((u2\_algstr\_0 X2 = k2\_partfun1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0) (u2\_algstr\_0 \\ & X0) (k2\_zfmisc\_1 (k6\_fvaluat1 X0 X1) (k6\_fvaluat1 X0 X1))) \wedge ((u2\_struct\_0 \\ & X2 = k4\_struct\_0 X0) \wedge (u3\_struct\_0 X2 = k5\_struct\_0 X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. \forall X1. (X0 = X1) \Leftrightarrow ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (((v1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \wedge (v3\_ring\_1 X1 X0)) \Rightarrow (v4\_ring\_1 X1 X0))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l6\_algstr\_0 X0) \Rightarrow (((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v5\_vectsp\_1 X0) \wedge (v1\_realset2 X0))))))) \Rightarrow ((\neg v6\_struct\_0 X0) \wedge \\ & ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge (v4\_vectsp\_1 \\ & X0)))))) \end{aligned} \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\ & (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge (l6\_algstr\_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1\_fvaluat1 X1 X0) \Rightarrow ((v3\_fvaluat1 \\ & X0) \Rightarrow (v4\_ring\_1 (k8\_fvaluat1 X0 X1) (k7\_fvaluat1 X0 X1)))) \end{aligned}$$