

## t39\_clopban3

(TMKw2ejFsM4Yqy625uNB3c6N6VJMWJuqtbB)

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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  $v3\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp\_0 : \iota \Rightarrow o$  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  $v8\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v1\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v2\_cfuncdom : \iota \Rightarrow o$  be given. Let  $v5\_clopban2 : \iota \Rightarrow o$  be given. Let  $l1\_clopban2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_clopban3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k5\_clopban3 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_normsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$m2\_subset\_1 \ k6\_numbers \ k1\_numbers \ k5\_numbers \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 \ X0) \wedge (v13\_algstr\_0 \ X0) \wedge \\ & ((v2\_rlvect\_1 \ X0) \wedge (v3\_rlvect\_1 \ X0) \wedge (v4\_rlvect\_1 \ X0) \wedge (v3\_normsp\_0 \\ & \ X0) \wedge (v4\_normsp\_0 \ X0) \wedge (v2\_clvect\_1 \ X0) \wedge (v3\_clvect\_1 \ X0) \wedge \\ & ((v4\_clvect\_1 \ X0) \wedge (v5\_clvect\_1 \ X0) \wedge (v8\_clvect\_1 \ X0) \wedge (v3\_group\_1 \\ & \ X0) \wedge (v1\_vectsp\_1 \ X0) \wedge (v3\_vectsp\_1 \ X0) \wedge (v2\_cfuncdom \ X0) \wedge \\ & ((v5\_clopban2 \ X0) \wedge (l1\_clopban2 \ X0)))))))))) \wedge (m1\_subset\_1 \\ & \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow ((v1\_funct\_1 \ (k5\_clopban3 \ X0 \ X1)) \wedge (v1\_funct\_2 \\ & \ (k5\_clopban3 \ X0 \ X1) \ k5\_numbers \ (u1\_struct\_0 \ X0)) \wedge (m1\_subset\_1 \\ & \ (k5\_clopban3 \ X0 \ X1) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ (u1\_struct\_0 \\ & \ X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\ & ((v4\_normsp\_0 X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 \\ & X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ( \\ & (v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 X0) \wedge ((v2\_cfunclom X0) \wedge ((v5\_clopan2 \\ & X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow \\ & (k6\_clopan3 X0 X1 X2 = k1\_normsp\_1 X0 (k5\_clopan3 X0 X1) X2))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\ & ((v4\_normsp\_0 X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 \\ & X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ( \\ & (v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 X0) \wedge ((v2\_cfunclom X0) \wedge ((v5\_clopan2 \\ & X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.((v1\_funcl\_1 X2) \wedge ((v1\_funcl\_2 \\ & X2 k5\_numbers (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k5\_numbers (u1\_struct\_0 X0)))))) \Rightarrow ((X2 = k5\_clopan3 \\ & X0 X1) \Leftrightarrow ((k1\_normsp\_1 X0 X2 k6\_numbers = k5\_struct\_0 X0) \wedge (\forall X3. \\ & (m2\_subset\_1 X3 k1\_numbers k5\_numbers) \Rightarrow (k1\_normsp\_1 X0 X2 (k2\_nat\_1 \\ & X3 np\_1) = k6\_algstr\_0 X0 (k1\_normsp\_1 X0 X2 X3) X1)))))) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\ & ((v4\_normsp\_0 X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 \\ & X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ( \\ & (v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 X0) \wedge ((v2\_cfunclom X0) \wedge ((v5\_clopan2 \\ & X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (k6\_clopan3 X0 X1 k6\_numbers = k5\_struct\_0 \\ & X0)) \end{aligned}$$