

## t34\_clopban4

(TMdhiJxY46LrENyx9Bz1Ljaj2sLy4pH4UE9)

October 27, 2020

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  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v1\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v2\_clvect\_1 : \iota \Rightarrow o$  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  $v2\_cfunclom : \iota \Rightarrow o$  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  $r1\_lopban\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_clopban4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_clopban3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_clopban4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  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  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_cfunclom : \iota \Rightarrow o$  be given. Let  $v1\_funcl_1 : \iota \Rightarrow o$  be given. Let  $k6\_clopban4 : \iota \Rightarrow \iota$  be given. Let  $v1\_funcl_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funcl_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 \\ & X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)))) \Rightarrow ((r1\_lopban\_4 X0 X1 X2) \Rightarrow (r1\_lopban\_4 X0 X2 X1)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v2\_rlvect\_1 X0) \wedge (l1\_algstr\_0 \\ & X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (k3\_rlvect\_1 X0 X1 X2 = k1\_algstr\_0 X0 X1 X2) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\ & ((v4\_normsp\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 \\ & X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge \\ & ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v2\_cfunclom X0) \wedge ((v5\_clopan2 \\ & X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow ((r1\_lopan\_4 X0 X1 X2) \Rightarrow (k6\_algstr\_0 X0 (k1\_clopan3 X0 ( \\ & k1\_clopan4 X0 X1)) (k1\_clopan3 X0 (k1\_clopan4 X0 X2)) = k1\_clopan3 \\ & X0 (k1\_clopan4 X0 (k3\_rlvect\_1 X0 X1 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l2\_clvect\_1 X0) \Rightarrow ((l1\_clvect\_1 X0) \wedge (l2\_normsp\_0 X0)) \quad (7)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1\_clvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_clopan2 X0) \Rightarrow ((l1\_cfunclom X0) \wedge (l2\_clvect\_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_cfunclom X0) \Rightarrow ((l6\_algstr\_0 X0) \wedge (l1\_clvect\_1 X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge \\ & ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 \\ & X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_vectsp\_1 X0) \wedge ( \\ & (v3\_vectsp\_1 X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 \\ & X0) \wedge ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v2\_cfunclom X0) \wedge \\ & ((v5\_clopan2 X0) \wedge (l1\_clopan2 X0)))))))))))))) \wedge (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (m1\_subset\_1 (k7\_clopan4 X0 X1) (u1\_struct\_0 \\ & X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\
& ((v4\_normsp\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 \\
& X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge \\
& ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v2\_cfundom X0) \wedge ((v5\_clopan2 \\
& X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow ((v1\_funct\_1 (k6\_clopan4 \\
& X0)) \wedge ((v1\_funct\_2 (k6\_clopan4 X0) (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)) \wedge (m1\_subset\_1 (k6\_clopan4 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X0))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v2\_rlvect\_1 X0) \wedge (l1\_algstr\_0 \\
& X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (m1\_subset\_1 (k3\_rlvect\_1 X0 X1 X2) (u1\_struct\_0 X0))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\
& ((v4\_normsp\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 \\
& X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge \\
& ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v2\_cfundom X0) \wedge ((v5\_clopan2 \\
& X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\
& X1 (u1\_struct\_0 X0) \Rightarrow (k7\_clopan4 X0 X1 = k3\_funct\_2 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0) (k6\_clopan4 X0 X1)))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\
& ((v4\_normsp\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 \\
& X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge \\
& ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v2\_cfundom X0) \wedge ((v5\_clopan2 \\
& X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow (\forall X1. ((v1\_funct\_1 \\
& X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow \\
& ((X1 = k6\_clopan4 X0) \Leftrightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0) \Rightarrow (k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X1 X2 = k1\_clopan3 \\
& X0 (k1\_clopan4 X0 X2))))))
\end{aligned} \tag{16}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r1\_lopban\_4 X0 X1 X2) \Leftrightarrow (k6\_algstr\_0 X0 X1 X2 = \\ & k6\_algstr\_0 X0 X2 X1)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v2\_rlvect\_1 X0) \wedge (l1\_algstr\_0 \\ & X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (k3\_rlvect\_1 X0 X1 X2 = k3\_rlvect\_1 X0 X2 X1) \end{aligned} \quad (18)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge \\ & ((v4\_normsp\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v1\_vectsp\_1 X0) \wedge ((v3\_vectsp\_1 \\ & X0) \wedge ((v2\_clvect\_1 X0) \wedge ((v3\_clvect\_1 X0) \wedge ((v4\_clvect\_1 X0) \wedge \\ & ((v5\_clvect\_1 X0) \wedge ((v8\_clvect\_1 X0) \wedge ((v2\_cfundom X0) \wedge ((v5\_clopan2 \\ & X0) \wedge (l1\_clopan2 X0)))))))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow ((r1\_lopban\_4 X0 X1 X2) \Rightarrow ((k7\_clopan4 X0 (k3\_rlvect\_1 X0 \\ & X1 X2) = k6\_algstr\_0 X0 (k7\_clopan4 X0 X1) (k7\_clopan4 X0 X2)) \wedge \\ & ((k7\_clopan4 X0 (k3\_rlvect\_1 X0 X2 X1) = k6\_algstr\_0 X0 (k7\_clopan4 \\ & X0 X2) (k7\_clopan4 X0 X1)) \wedge ((k7\_clopan4 X0 (k3\_rlvect\_1 X0 X1 \\ & X2) = k7\_clopan4 X0 (k3\_rlvect\_1 X0 X2 X1)) \wedge (r1\_lopban\_4 X0 (k7\_clopan4 \\ & X0 X1) (k7\_clopan4 X0 X2)))))))))) \end{aligned}$$