

t36\_mod\_4 (TM-  
TykZDF9RJcYEm7HMdRYXmdbvAQEcB5Mdh)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  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  $v9\_mod\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_mod\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_mod\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_mod\_4 : \iota \Rightarrow \iota$  be given. Let  $v1\_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ & \quad X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow (\forall X1. ((\neg \\ & v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v4\_vectsp\_1 X1) \wedge ((v3\_rlvect\_1 \\ & \quad X1) \wedge ((v4\_rlvect\_1 X1) \wedge (l6\_algstr\_0 X1)))))) \Rightarrow (\forall X2. (( \\ & \quad v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & \quad X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & \quad X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v1\_ringcat1 X2 X0 X1) \Leftrightarrow (v2\_mod\_4 ( \\ & \quad k7\_mod\_4 X0 X1 X2) X0 (k2\_mod\_4 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & \quad X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & \quad X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v9\_mod\_4 X1 X0) \Leftrightarrow (v1\_ringcat1 X1 X0 \\ & \quad X0))) \end{aligned} \quad (2)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v4\_vectsp\_1 \\ & \quad X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow \\ & (\forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) \\ & \quad (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & \quad (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v9\_mod\_4 X1 X0) \Leftrightarrow (v2\_mod\_4 \\ & \quad (k7\_mod\_4 X0 X0 X1) X0 (k2\_mod\_4 X0)))) \end{aligned}$$