

t28\_rlsb\_1 (TMRQbCkm-  
SEn7uDdx4oFhem2vCN28AY4TR5m)

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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  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $m1\_rlsub\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_rlvect\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (r1\_tarski X0 X1) \Rightarrow ((r1\_tarski \\ & (k2\_zfmisc\_1 X0 X2) (k2\_zfmisc\_1 X1 X2)) \wedge (r1\_tarski (k2\_zfmisc\_1 \\ & X2 X0) (k2\_zfmisc\_1 X2 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\ & X2)) \Rightarrow ((r1\_tarski X0 X1) \Rightarrow ((k5\_relat\_1 (k5\_relat\_1 X2 X0) X1 = k5\_relat\_1 \\ & X2 X0) \wedge (k5\_relat\_1 (k5\_relat\_1 X2 X1) X0 = k5\_relat\_1 X2 X0))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. (l1\_rlvect\_1 X0) \Rightarrow ((v1\_funct\_1 (u1\_rlvect\_1 X0)) \wedge \\ & ((v1\_funct\_2 (u1\_rlvect\_1 X0) (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\ & X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 (u1\_rlvect\_1 X0) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X0)) (u1\_struct\_0 \\ & X0)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0. (& l1\_algstr\_0 X0) \Rightarrow ((v1\_funct\_1 (u1\_algstr\_0 X0)) \wedge \\ & ((v1\_funct\_2 (u1\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 (u1\_algstr\_0 \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. (& (\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1. (m1\_rlsub\_1 X1 X0) \Rightarrow ((\neg v2\_struct\_0 \\ & X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ & ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 \\ & X1) \wedge ((v8\_rlvect\_1 X1) \wedge (l1\_rlvect\_1 X1)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0. (l1\_rlvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. (& (\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 \\ & X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\ & ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 \\ & X1) \wedge (l1\_rlvect\_1 X1)))))))))) \Rightarrow ((m1\_rlsub\_1 X1 X0) \Leftrightarrow ((r1\_tarski \\ & (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge ((k4\_struct\_0 X1 = k4\_struct\_0 \\ & X0) \wedge ((u1\_algstr\_0 X1 = k1\_realset1 (u1\_algstr\_0 X0) (u1\_struct\_0 \\ & X1)) \wedge (u1\_rlvect\_1 X1 = k5\_relat\_1 (u1\_rlvect\_1 X0) (k2\_zfmisc\_1 \\ & k1\_numbers (u1\_struct\_0 X1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. k1\_realset1 X0 X1 = k5\_relat\_1 X0 (k2\_zfmisc\_1 X1 X1)) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v2\_rlvect\_1 \\ & X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge (v7\_rlvect\_1 X0) \wedge (v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))) \Rightarrow (\forall X1.(m1\_rlsub\_1 X1 X0) \Rightarrow (\forall X2.(m1\_rlsub\_1 \\ & X2 X0) \Rightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 X2)) \Rightarrow (m1\_rlsub\_1 \\ & X1 X2)))) \end{aligned}$$