

## t36\_rlsb\_1

(TMQ7cmodjAfkFDoTcSFV71SFF9mDj7yWJS5)

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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  $k1\_rlsub\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_rlvect\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 X0)))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge (l1\_rlvect\_1 X1)))))))))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge ((v5\_rlvect\_1 X2) \wedge ((v6\_rlvect\_1 X2) \wedge ((v7\_rlvect\_1 X2) \wedge ((v8\_rlvect\_1 X2) \wedge (l1\_rlvect\_1 X2)))))))))) \Rightarrow (((m1\_rlsub\_1 X0 X1) \wedge (m1\_rlsub\_1 X1 X2)) \Rightarrow (m1\_rlsub\_1 X0 X2)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \tag{2}$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ &X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ &((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ &X0)))))))))) \Rightarrow (\forall X1. (m1\_rlsub\_1 X1 X0) \Rightarrow ((\neg v2\_struct\_0 \\ &X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ &((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 \\ &X1) \wedge ((v8\_rlvect\_1 X1) \wedge (l1\_rlvect\_1 X1))))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. (l2\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (5)$$

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.

$$\forall X0. (l2\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k4\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ &X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ &((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ &X0)))))))))) \Rightarrow ((v1\_rlvect\_1 (k1\_rlsub\_1 X0)) \wedge (m1\_rlsub\_1 (k1\_rlsub\_1 \\ &X0) X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ &X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ &((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ &X0)))))))))) \Rightarrow (\forall X1. ((v1\_rlvect\_1 X1) \wedge (m1\_rlsub\_1 X1 X0)) \Rightarrow \\ &((X1 = k1\_rlsub\_1 X0) \Leftrightarrow (u1\_struct\_0 X1 = k6\_domain\_1 (u1\_struct\_0 \\ &X0) (k4\_struct\_0 X0)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v2\_rlvect\_1 \\
& X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge (v7\_rlvect\_1 X0) \wedge (v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge (v13\_algstr\_0 \\
& X1) \wedge (v2\_rlvect\_1 X1) \wedge (v3\_rlvect\_1 X1) \wedge (v4\_rlvect\_1 X1) \wedge \\
& ((v5\_rlvect\_1 X1) \wedge (v6\_rlvect\_1 X1) \wedge (v7\_rlvect\_1 X1) \wedge (v8\_rlvect\_1 \\
& X1) \wedge (l1\_rlvect\_1 X1)))))) \Rightarrow ((m1\_rlsub\_1 X1 X0) \Leftrightarrow ((r1\_tarski \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge ((k4\_struct\_0 X1 = k4\_struct\_0 \\
& X0) \wedge ((u1\_algstr\_0 X1 = k1\_realset1 (u1\_algstr\_0 X0) (u1\_struct\_0 \\
& X1)) \wedge (u1\_rlvect\_1 X1 = k5\_relat\_1 (u1\_rlvect\_1 X0) (k2\_zfmisc\_1 \\
& k1\_numbers (u1\_struct\_0 X1))))))
\end{aligned} \tag{11}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v2\_rlvect\_1 \\
& X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge (v7\_rlvect\_1 X0) \wedge (v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))) \Rightarrow (\forall X1.(m1\_rlsub\_1 X1 X0) \Rightarrow (k1\_rlsub\_1 X1 = \\
& k1\_rlsub\_1 X0))
\end{aligned}$$