

# t18\_rlvect\_3 (TMVzKQZ- ZVBA19ib3Z6yCiptmreq6mm2gKLZ)

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  $v5\_rlvect\_1 : \iota \Rightarrow o$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $m1\_rlsub\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_rlvect\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_rlsub\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $m2\_rlvect\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_rlvect\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2. (m1\_rlsub\_1 X2 X0) \Rightarrow ((u1\_struct\_0 X2 = X1) \Rightarrow ( \\ & v1\_rlsub\_1 X1 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1. ((v1\_rlvect\_1 X1) \wedge (m1\_rlsub\_1 X1 X0)) \Rightarrow \\ & (\forall X2. ((v1\_rlvect\_1 X2) \wedge (m1\_rlsub\_1 X2 X0)) \Rightarrow ((\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_struct\_0 X1 X3) \Leftrightarrow (r1\_struct\_0 \\ & X2 X3)))) \Rightarrow (X1 = X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0))) \Rightarrow (((X1 \neq k1\_xboole\_0) \wedge (v1\_rlsub\_1 X1 X0)) \Leftrightarrow (\forall X2.( \\ m2\_rlvect\_2 X2 X0 X1) \Rightarrow (k6\_rlvect\_2 X0 X2 \in X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge \\ ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 \\ X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge \\ (l1\_rlvect\_1 X1)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X1))) \Rightarrow ((X0 \in X2) \Rightarrow (r1\_struct\_0 (k1\_rlvect\_3 X1 X2) \\ X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge \\ ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 \\ X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 X1) \wedge ((v8\_rlvect\_1 X1) \wedge \\ (l1\_rlvect\_1 X1)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X1))) \Rightarrow ((r1\_struct\_0 (k1\_rlvect\_3 X1 X2) X0) \Leftrightarrow (\exists X3. \\ (m2\_rlvect\_2 X3 X1 X2) \wedge (X0 = k6\_rlvect\_2 X1 X3)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 \\ (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$v1\_xboole\_0 \quad k1\_xboole\_0 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ X0)))))))))) \Rightarrow (\forall X1.(m1\_rlsub\_1 X1 X0) \Rightarrow ((\neg v2\_struct\_0 \\ X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\ ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 \\ X1) \wedge ((v8\_rlvect\_1 X1) \wedge (l1\_rlvect\_1 X1)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_rlvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge \\ & ((v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v5\_rlvect\_1 \\ & X0) \wedge (v6\_rlvect\_1 X0) \wedge (v7\_rlvect\_1 X0) \wedge (v8\_rlvect\_1 X0) \wedge \\ & (l1\_rlvect\_1 X0)))))) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow ((v1\_rlvect\_1 (k1\_rlvect\_3 X0 X1)) \wedge (m1\_rlsub\_1 (k1\_rlvect\_3 \\ & X0 X1) X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(r1\_struct\_0 X0 X1) \Leftrightarrow (X1 \in u1\_struct\_0 X0)) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v2\_rlvect\_1 \\ & X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge (v7\_rlvect\_1 X0) \wedge (v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2. ((v1\_rlvect\_1 X2) \wedge (m1\_rlsub\_1 X2 X0)) \Rightarrow ((X1 = \\ & u1\_struct\_0 X2) \Rightarrow (k1\_rlvect\_3 X0 X1 = X2)))) \end{aligned}$$