

# t29\_rlvect\_4 (TM- NWw2KDwc7SGc9FckgYZp3oFrfeNKM5hY4)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_rlvect\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.((\neg v2\_struct\_0 \\
& X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge \\
& ((v4\_rlvect\_1 X1) \wedge ((v5\_rlvect\_1 X1) \wedge ((v6\_rlvect\_1 X1) \wedge ((v7\_rlvect\_1 \\
& X1) \wedge ((v8\_rlvect\_1 X1) \wedge (l1\_rlvect\_1 X1)))))))))) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X1)) \Rightarrow \\
& ((v1\_rlvect\_3 (k8\_domain\_1 (u1\_struct\_0 X1) X2 X3 X4) X1) \Rightarrow ((X2 = \\
& X4) \vee ((X2 = X3) \vee ((X4 = X3) \vee ((X0 = k6\_numbers) \vee (v1\_rlvect\_3 (k8\_domain\_1 \\
& (u1\_struct\_0 X1) X2 X3 (k1\_rlvect\_1 X1 X4 X0)) X1))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\
& (k4\_algstr\_0 X0 X1 = k1\_rlvect\_1 X0 X1 (k1\_real\_1 np\_1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$k4\_xcmplx\_0 \ (k4\_xcmplx\_0 \ np\_1) = np\_1 \quad (4)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (5)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (k1\_real\_1 \ X0 = k4\_xcmplx\_0 \ X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1\_xreal\_0 \ X0) \Rightarrow & ((v1\_xcmplx\_0 \ (k4\_xcmplx\_0 \ X0)) \wedge \\ & (v1\_xreal\_0 \ (k4\_xcmplx\_0 \ X0))) \end{aligned} \quad (7)$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v3\_xreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X0)) \Rightarrow & ((v1\_xcmplx\_0 \\ & (k4\_xcmplx\_0 \ X0)) \wedge (\neg v2\_xreal\_0 \ (k4\_xcmplx\_0 \ X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (m1\_subset\_1 \ (k1\_real\_1 \ X0) \ k1\_numbers) \quad (10)$$

Assume the following.

$$\forall X0. ((v1\_xreal\_0 \ X0) \wedge (v3\_xreal\_0 \ X0)) \Rightarrow ((\neg v1\_xboole\_0 \ X0) \wedge ((v1\_xreal\_0 \ X0) \wedge (\neg v2\_xreal\_0 \ X0))) \quad (11)$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 \ X0) \Rightarrow (v1\_xreal\_0 \ X0) \quad (12)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (v1\_xreal\_0 \ X0) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 \ X0) \wedge ((v13\_algstr\_0 \ X0) \wedge ((v2\_rlvect\_1 \\ & \ X0) \wedge ((v3\_rlvect\_1 \ X0) \wedge ((v4\_rlvect\_1 \ X0) \wedge ((v5\_rlvect\_1 \ X0) \wedge \\ & ((v6\_rlvect\_1 \ X0) \wedge ((v7\_rlvect\_1 \ X0) \wedge ((v8\_rlvect\_1 \ X0) \wedge (l1\_rlvect\_1 \\ & \ X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ X0)) \Rightarrow \\ & (\forall X2. (m1\_subset\_1 \ X2 \ (u1\_struct\_0 \ X0)) \Rightarrow (\forall X3. (m1\_subset\_1 \\ & \ X3 \ (u1\_struct\_0 \ X0)) \Rightarrow ((v1\_rlvect\_3 \ (k8\_domain\_1 \ (u1\_struct\_0 \\ & \ X0) \ X1 \ X2 \ X3) \ X0) \Rightarrow ((X1 = X3) \vee ((X1 = X2) \vee ((X3 = X2) \vee (v1\_rlvect\_3 \ (k8\_domain\_1 \\ & \ (u1\_struct\_0 \ X0) \ X1 \ X2 \ (k4\_algstr\_0 \ X0 \ X3)) \ X0)))))))))) \end{aligned}$$