

## t20\_rusub\_5

(TMQYJ1KFffTpnwwfKNFNRCJKxNn8AedDz2j)

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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  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rusub\_4 : \iota \Rightarrow \iota \Rightarrow o$  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  $k1\_rusub\_5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_rusub\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_rusub\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 X0)))))))))) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 X1) \wedge ((v2\_rusub\_4 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X2 \in X1) \Rightarrow (k1\_rusub\_5 X0 X1 (k6\_domain\_1 (u1\_struct\_0 X0) X2) = k3\_tarski (ReplSep (toset ( \\ & \lambda X3 : \iota. m1\_subset\_1 X3 (u1\_struct\_0 X0))) (\lambda X3 : \iota. X3 \in X1) (\lambda X3 : \iota. k1\_rusub\_5 X0 X1 (k6\_domain\_1 (u1\_struct\_0 X0) X3))))))))) \quad (2) \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge ((v2\_rusub\_4 X1 \\
& X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow (k1\_rusub\_5 \\
& X0 X1 X1 = k3\_tarSKI (ReplSep (toset (\lambda X2 : \iota. m1\_subset\_1 X2 \\
& (u1\_struct\_0 X0))) (\lambda X2 : \iota. X2 \in X1) (\lambda X2 : \iota. k1\_rusub\_5 \\
& X0 X1 (k6\_domain\_1 (u1\_struct\_0 X0) X2))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge ((v2\_rusub\_4 X1 \\
& X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow (\forall X2. \\
& (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\neg (X2 \in X1) \wedge (\forall X3. ((\neg \\
& v1\_xboole\_0 X3) \wedge ((v2\_rusub\_4 X3 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0)))))) \Rightarrow (\neg (X3 = k1\_rusub\_5 X0 X1 (k6\_domain\_1 (u1\_struct\_0 \\
& X0) X2)) \wedge ((r1\_rusub\_5 X0 X1 X3) \wedge (v3\_rusub\_4 X3 X0))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 \\
& (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (k4\_struct\_0 X0 \in k1\_rusub\_5 \\
& X0 X1 X1))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Leftrightarrow (\forall X1. \neg X1 \in X0) \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge ((v2\_rusub\_4 X1 \\
& X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow (\exists X2. \\
& ((\neg v1\_xboole\_0 X2) \wedge ((v2\_rusub\_4 X2 X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0)))))) \wedge ((X2 = k1\_rusub\_5 X0 X1 X1) \wedge ((v3\_rusub\_4 \\
& X2 X0) \wedge (r1\_rusub\_5 X0 X1 X2))))
\end{aligned}$$