

## t22\_rusub\_3

(TMMhQn27gztSKTad8ZVjirsWuqo36iF2F3t)

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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  $v2\_bhsp.1 : \iota \Rightarrow o$  be given. Let  $l1\_bhsp.1 : \iota \Rightarrow o$  be given. Let  $m1\_rusub.1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_rlvect.3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_rlvect.2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_rlvect.2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_rlvect.2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr.0 : \iota \Rightarrow o$  be given. Let  $m2\_rlvect.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_rlvect.1 : \iota \Rightarrow o$  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. Let  $u1\_bhsp.1 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole.0 : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v13\_algstr.0 X0) \wedge ((v2\_rlvect.1 \\ & X0) \wedge ((v3\_rlvect.1 X0) \wedge ((v4\_rlvect.1 X0) \wedge ((v5\_rlvect.1 X0) \wedge \\ & ((v6\_rlvect.1 X0) \wedge ((v7\_rlvect.1 X0) \wedge ((v8\_rlvect.1 X0) \wedge ((v2\_bhsp.1 \\ & X0) \wedge (l1\_bhsp.1 X0)))))))))) \Rightarrow (\forall X1.(m1\_rusub.1 X1 X0) \Rightarrow \\ & (k4\_struct.0 X1 = k4\_struct.0 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1.(m1\_subset.1 X0 (k1\_zfmisc.1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct.0 X0) \wedge ((v13\_algstr.0 X0) \wedge ((v2\_rlvect.1 \\ & X0) \wedge ((v3\_rlvect.1 X0) \wedge ((v4\_rlvect.1 X0) \wedge ((v5\_rlvect.1 X0) \wedge \\ & ((v6\_rlvect.1 X0) \wedge ((v7\_rlvect.1 X0) \wedge ((v8\_rlvect.1 X0) \wedge ((v2\_bhsp.1 \\ & X0) \wedge (l1\_bhsp.1 X0)))))))))) \Rightarrow (\forall X1.(m1\_rusub.1 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_rlvect.2 X2 X0) \Rightarrow (\neg (r1\_tarski (k3\_rlvect.2 X0 \\ & X2) (u1\_struct.0 X1)) \wedge (\forall X3.(m1\_rlvect.2 X3 X1) \Rightarrow (\neg (k3\_rlvect.2 \\ & X1 X3 = k3\_rlvect.2 X0 X2) \wedge (k6\_rlvect.2 X1 X3 = k6\_rlvect.2 X0 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarSKI X0 X1)\wedge(r1\_tarSKI X1 X2))\Rightarrow(r1\_tarSKI X0 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l2\_algstr\_0 X0))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(\forall X2.(m2\_rlvect\_2 X2 X0 X1)\Rightarrow(m1\_rlvect\_2 X2 X0)) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge((v5\_rlvect\_1 X0)\wedge((v6\_rlvect\_1 X0)\wedge((v7\_rlvect\_1 X0)\wedge((v8\_rlvect\_1 X0)\wedge((v2\_bhsp\_1 X0)\wedge(l1\_bhsp\_1 X0))))))))))\Rightarrow(\forall X1.(m1\_rusub\_1 X1 X0)\Rightarrow((\neg v2\_struct\_0 X1)\wedge((v13\_algstr\_0 X1)\wedge((v2\_rlvect\_1 X1)\wedge((v3\_rlvect\_1 X1)\wedge((v4\_rlvect\_1 X1)\wedge((v5\_rlvect\_1 X1)\wedge((v6\_rlvect\_1 X1)\wedge((v7\_rlvect\_1 X1)\wedge((v8\_rlvect\_1 X1)\wedge((v2\_bhsp\_1 X1)\wedge(l1\_bhsp\_1 X1)))))))))))))) \quad (6)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1\_bhsp\_1 X0)\Rightarrow(l1\_rlvect\_1 X0) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l2\_algstr\_0 X0))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))\Rightarrow(\forall X2.(m1\_rlvect\_2 X2 X0)\Rightarrow((m2\_rlvect\_2 X2 X0 X1)\Leftrightarrow(r1\_tarSKI (k3\_rlvect\_2 X0 X2) X1)))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge((v5\_rlvect\_1 X0)\wedge((v6\_rlvect\_1 X0)\wedge((v7\_rlvect\_1 X0)\wedge((v8\_rlvect\_1 X0)\wedge((v2\_bhsp\_1 X0)\wedge(l1\_bhsp\_1 X0))))))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge((v13\_algstr\_0 X1)\wedge((v2\_rlvect\_1 X1)\wedge((v3\_rlvect\_1 X1)\wedge((v4\_rlvect\_1 X1)\wedge((v5\_rlvect\_1 X1)\wedge((v6\_rlvect\_1 X1)\wedge((v7\_rlvect\_1 X1)\wedge((v8\_rlvect\_1 X1)\wedge((v2\_bhsp\_1 X1)\wedge(l1\_bhsp\_1 X1))))))))))\Rightarrow((m1\_rusub\_1 X1 X0)\Leftrightarrow((r1\_tarSKI (u1\_struct\_0 X1) (u1\_struct\_0 X0))\wedge((k4\_struct\_0 X1 = k4\_struct\_0 X0)\wedge((u1\_algstr\_0 X1 = k1\_realset1 (u1\_algstr\_0 X0) (u1\_struct\_0 X1))\wedge((u1\_rlvect\_1 X1 = k5\_relat\_1 (u1\_rlvect\_1 X0) (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X1)))\wedge((u1\_bhsp\_1 X1 = k1\_realset1 (u1\_bhsp\_1 X0) (u1\_struct\_0 X1)))))))))) \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X0))) \Rightarrow ((v1\_rlvect\_3 X1 X0) \Leftrightarrow (\forall X2.(m2\_rlvect\_2 X2 X0 X1) \Rightarrow \\
& ((k6\_rlvect\_2 X0 X2 = k4\_struct\_0 X0) \Rightarrow (k3\_rlvect\_2 X0 X2 = k1\_xboole\_0))))))
\end{aligned} \tag{11}$$

**Theorem 1**

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