

# t5\_rusub\_4 (TMPf- NaKRfhShaw9ebNGbQ1amByVehPoevoT)

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  $v2\_bhsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_bhsp\_1 : \iota \Rightarrow o$  be given. Let  $m1\_rusub\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_rusub\_4 : \iota \Rightarrow o$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  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  $g1\_bhsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_rlvect\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_bhsp\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_rusub\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_rlvect\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
 & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
 & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\
 & X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow ((v1\_rusub\_4 X0) \Rightarrow (\forall X1. \\
 & (m1\_rusub\_3 X1 X0) \Rightarrow (v1\_finset\_1 X1)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\
& X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1.((v1\_finset\_1 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (\forall X2. \\
& ((v1\_finset\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X0)))) \Rightarrow (((g1\_bhsp\_1 (u1\_struct\_0 X0) (u2\_struct\_0 X0) (u1\_algstr\_0 \\
& X0) (u1\_rlvect\_1 X0) (u1\_bhsp\_1 X0) = k1\_rusub\_3 X0 X1) \wedge (v1\_rlvect\_3 \\
& X2 X0)) \Rightarrow ((r1\_xxreal\_0 (k5\_card\_1 X2) (k5\_card\_1 X1)) \wedge (\exists X3. \\
& ((v1\_finset\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X0)))) \wedge (r1\_tarski X3 X1) \wedge ((k5\_card\_1 X3 = k6\_xcmplx\_0 (k5\_card\_1 \\
& X1) (k5\_card\_1 X2)) \wedge (g1\_bhsp\_1 (u1\_struct\_0 X0) (u2\_struct\_0 \\
& X0) (u1\_algstr\_0 X0) (u1\_rlvect\_1 X0) (u1\_bhsp\_1 X0) = k1\_rusub\_3 \\
& X0 (k4\_subset\_1 (u1\_struct\_0 X0) X2 X3))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X0)) \Rightarrow (X0 = X1)) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow (k5\_card\_1 X0 = k1\_card\_1 X0) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\
& X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1.(m1\_rusub\_3 X1 X0) \Rightarrow \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow (m1\_subset\_1 (k5\_card\_1 X0) k4\_ordinal1) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\
& X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0))) \Rightarrow ((m1\_rusub\_3 X1 X0) \Leftrightarrow ((v1\_rlvect\_3 X1 X0) \wedge \\
& (k1\_rusub\_3 X0 X1 = g1\_bhsp\_1 (u1\_struct\_0 X0) (u2\_struct\_0 X0) \\
& (u1\_algstr\_0 X0) (u1\_rlvect\_1 X0) (u1\_bhsp\_1 X0))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \tag{8}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\ & X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1.(m1\_rusub\_3 X1 X0) \Rightarrow \\ & (\forall X2.(m1\_rusub\_3 X2 X0) \Rightarrow ((v1\_rusub\_4 X0) \Rightarrow (k1\_card\_1 X1 = \\ & k1\_card\_1 X2)))) \end{aligned}$$