

## t60\_rusub\_2

(TMUr757G62zSh56HM8GuNaSgDCtHVpmi6Fm)

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  $v1\_bhsp\_1 : \iota \Rightarrow o$  be given. Let  $m1\_rusub\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_rusub\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ &X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ &((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\ &X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1. (m1\_rusub\_1 X1 X0) \Rightarrow \\ &(\forall X2. ((v1\_bhsp\_1 X2) \wedge (m1\_rusub\_1 X2 X0)) \Rightarrow ((m1\_rusub\_1 \\ &X2 X1) \Leftrightarrow (k2\_rusub\_2 X0 X2 X1 = X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ &X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ &((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\ &X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1. (m1\_rusub\_1 X1 X0) \Rightarrow \\ &(\forall X2. (m1\_rusub\_1 X2 X0) \Rightarrow ((m1\_rusub\_1 (k2\_rusub\_2 X0 X1 \\ &X2) X1) \wedge (m1\_rusub\_1 (k2\_rusub\_2 X0 X1 X2) X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ &X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ &((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\ &X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1. (m1\_rusub\_1 X1 X0) \Rightarrow \\ &(\forall X2. (m1\_rusub\_1 X2 X0) \Rightarrow (\forall X3. (m1\_rusub\_1 X3 X0) \Rightarrow \\ &(k2\_rusub\_2 X0 X1 (k2\_rusub\_2 X0 X2 X3) = k2\_rusub\_2 X0 (k2\_rusub\_2 \\ &X0 X1 X2) X3)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(v13\_algstr\_0 \\
& X0)\wedge(v2\_rlvect\_1 X0)\wedge(v3\_rlvect\_1 X0)\wedge(v4\_rlvect\_1 X0)\wedge \\
& ((v5\_rlvect\_1 X0)\wedge(v6\_rlvect\_1 X0)\wedge(v7\_rlvect\_1 X0)\wedge(v8\_rlvect\_1 \\
& X0)\wedge(v2\_bhsp\_1 X0)\wedge(l1\_bhsp\_1 X0))))))\wedge((m1\_rusub\_1 \\
& X1 X0)\wedge(m1\_rusub\_1 X2 X0))\Rightarrow((v1\_bhsp\_1 (k2\_rusub\_2 X0 X1 X2))\wedge \\
& (m1\_rusub\_1 (k2\_rusub\_2 X0 X1 X2) X0))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0)\wedge(v13\_algstr\_0 X0)\wedge(v2\_rlvect\_1 \\
& X0)\wedge(v3\_rlvect\_1 X0)\wedge(v4\_rlvect\_1 X0)\wedge(v5\_rlvect\_1 X0)\wedge \\
& ((v6\_rlvect\_1 X0)\wedge(v7\_rlvect\_1 X0)\wedge(v8\_rlvect\_1 X0)\wedge(v2\_bhsp\_1 \\
& X0)\wedge(l1\_bhsp\_1 X0))))))\Rightarrow(\forall X1.((v1\_bhsp\_1 X1)\wedge( \\
& m1\_rusub\_1 X1 X0))\Rightarrow(\forall X2.((v1\_bhsp\_1 X2)\wedge(m1\_rusub\_1 X2 \\
& X0))\Rightarrow(\forall X3.((v1\_bhsp\_1 X3)\wedge(m1\_rusub\_1 X3 X0))\Rightarrow((m1\_rusub\_1 \\
& X1 X2)\Rightarrow(m1\_rusub\_1 (k2\_rusub\_2 X0 X1 X3) (k2\_rusub\_2 X0 X2 X3))))))
\end{aligned}$$