

## t36\_rusub\_5

(TMUi8eJ1MfhD2Dck3PU2zgxHndheSR7YX7L)

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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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_bhsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
 & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
 & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\
 & X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
 & X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
 & (m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\neg (X2 \in k4\_bhsp\_2 X0 X1 X3) \wedge (\forall X4. \\
 & (m1\_subset\_1 X4 k1\_numbers) \Rightarrow (\neg (\neg r1\_xxreal\_0 X4 k6\_numbers) \wedge \\
 & (r1\_tarski (k4\_bhsp\_2 X0 X2 X4) (k4\_bhsp\_2 X0 X1 X3))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
 & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
 & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v2\_bhsp\_1 \\
 & X0) \wedge (l1\_bhsp\_1 X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 \\
 & X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\forall X3. (m1\_subset\_1 \\
 & X3 k1\_numbers) \Rightarrow ((r1\_xxreal\_0 X2 X3) \Rightarrow (r1\_tarski (k4\_bhsp\_2 X0 \\
 & X1 X2) (k4\_bhsp\_2 X0 X1 X3))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc.1 X0))\Rightarrow(k9\_subset\_1 X0 X1 X2 = k3\_xboole\_0 X1 X2) \quad (4)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge \\ &((v5\_rlvect\_1 X0)\wedge((v6\_rlvect\_1 X0)\wedge((v7\_rlvect\_1 X0)\wedge((v8\_rlvect\_1 X0)\wedge((v2\_bhspl\_1 X0)\wedge(l1\_bhspl\_1 X0))))))))))\wedge((m1\_subset\_1 \\ &X1 (u1\_struct\_0 X0)\wedge(m1\_subset\_1 X2 k1\_numbers))\Rightarrow(m1\_subset\_1 \\ &(k4\_bhspl\_2 X0 X1 X2) (k1\_zfmisc.1 (u1\_struct\_0 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k3\_xboole\_0 X0 X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 \in X0)\wedge(X3 \in X1))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0)\wedge(v1\_xxreal\_0 X1))\Rightarrow((r1\_xxreal\_0 X0 X1)\vee(r1\_xxreal\_0 X1 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xxreal\_0 X0) \quad (9)$$

### Theorem 1

$$\begin{aligned} &\forall X0.(((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge((v5\_rlvect\_1 X0)\wedge \\ &((v6\_rlvect\_1 X0)\wedge((v7\_rlvect\_1 X0)\wedge((v8\_rlvect\_1 X0)\wedge((v2\_bhspl\_1 X0)\wedge(l1\_bhspl\_1 X0))))))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ &X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3. \\ &(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 \\ &k1\_numbers)\Rightarrow(\forall X5.(m1\_subset\_1 X5 k1\_numbers)\Rightarrow(\neg(X2 \in \\ &k9\_subset\_1 (u1\_struct\_0 X0) (k4\_bhspl\_2 X0 X1 X4) (k4\_bhspl\_2 X0 \\ &X3 X5))\wedge(\forall X6.(m1\_subset\_1 X6 k1\_numbers)\Rightarrow(\neg(r1\_tarski \\ &(k4\_bhspl\_2 X0 X2 X6) (k4\_bhspl\_2 X0 X1 X4))\wedge(r1\_tarski (k4\_bhspl\_2 \\ &X0 X2 X6) (k4\_bhspl\_2 X0 X3 X5)))))))))) \end{aligned}$$