

## t40\_weddwitt

(TMRf3Zfhxvsv3XWaK4XguhwuPSDiraS3qQK)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  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  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_weddwitt : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (\neg v6\_struct\_0 X0) \wedge \\
 & ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge (( \\
 & v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
 & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge (m1\_subset\_1 \\
 & X1 (u1\_struct\_0 X0))) \Rightarrow ((\neg v2\_struct\_0 (k5\_weddwitt X0 X1)) \wedge (( \\
 & \neg v6\_struct\_0 (k5\_weddwitt X0 X1)) \wedge ((v13\_algstr\_0 (k5\_weddwitt \\
 & X0 X1)) \wedge ((v33\_algstr\_0 (k5\_weddwitt X0 X1)) \wedge ((v36\_algstr\_0 ( \\
 & k5\_weddwitt X0 X1)) \wedge ((v2\_rlvect\_1 (k5\_weddwitt X0 X1)) \wedge ((v3\_rlvect\_1 \\
 & (k5\_weddwitt X0 X1)) \wedge ((v4\_rlvect\_1 (k5\_weddwitt X0 X1)) \wedge ((v3\_group\_1 \\
 & (k5\_weddwitt X0 X1)) \wedge ((v4\_vectsp\_1 (k5\_weddwitt X0 X1)) \wedge ((v5\_vectsp\_1 \\
 & (k5\_weddwitt X0 X1)) \wedge (l6\_algstr\_0 (k5\_weddwitt X0 X1)))))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\
& X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 \\
& (u1\_struct\_0 X0)) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((\neg v6\_struct\_0 \\
& X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v33\_algstr\_0 X2) \wedge ((v36\_algstr\_0 X2) \wedge \\
& ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge ((v3\_group\_1 \\
& X2) \wedge ((v4\_vectsp\_1 X2) \wedge ((v5\_vectsp\_1 X2) \wedge (l6\_algstr\_0 X2)))))))))) \Rightarrow \\
& ((X2 = k5\_weddwitt X0 X1) \Leftrightarrow ((u1\_struct\_0 X2 = ReplSep (toset (\lambda X3 : \\
& \iota.m1\_subset\_1 X3 (u1\_struct\_0 X0))) (\lambda X3 : \iota.k6\_algstr\_0 \\
& X0 X3 X1 = k6\_algstr\_0 X0 X1 X3) (\lambda X3 : \iota.X3)) \wedge ((u1\_algstr\_0 \\
& X2 = k1\_realset1 (u1\_algstr\_0 X0) (u1\_struct\_0 X2)) \wedge ((u2\_algstr\_0 \\
& X2 = k1\_realset1 (u2\_algstr\_0 X0) (u1\_struct\_0 X2)) \wedge ((k4\_struct\_0 \\
& X2 = k4\_struct\_0 X0) \wedge (k5\_struct\_0 X2 = k5\_struct\_0 X0)))))))))
\end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\
& X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 \\
& (u1\_struct\_0 X0)) \Rightarrow (k5\_struct\_0 (k5\_weddwitt X0 X1) = k5\_struct\_0 \\
& X0))
\end{aligned}$$