

## t17\_waybel\_1

(TMQuFtY5RPhBkiuqNd2cuAKhw4LwMxEvVrD)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v3\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v4\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v5\_orders\_2 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_lattice3 : \iota \Rightarrow o$  be given. Let  $v18\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_orders\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r4\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_reset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\
 & \quad X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1. ((\neg \\
 & \quad v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\
 & \quad X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
 & \quad X2 (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
 & \quad (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow (\neg (v3\_lattice3 \\
 & \quad X1) \wedge ((v18\_waybel\_0 X2 X1 X0) \wedge (\forall X3. ((v1\_funct\_1 X3) \wedge (( \\
 & \quad v1\_funct\_2 X3 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
 & \quad X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\
 & (\neg (v3\_waybel\_1 (k1\_waybel\_1 X0 X1 X3 X2) X0 X1) \wedge (\forall X4. (m1\_subset\_1 \\
 & \quad X4 (u1\_struct\_0 X0) \Rightarrow (r4\_waybel\_1 X1 (k3\_funct\_2 (u1\_struct\_0 \\
 & \quad X0) (u1\_struct\_0 X1) X3 X4) (k8\_reset\_1 (u1\_struct\_0 X1) (u1\_struct\_0 \\
 & \quad X0) X2 (k5\_waybel\_0 X0 X4))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\
& \quad X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\
& \quad X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow (\forall X3. \\
& ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) (u1\_struct\_0 \\
& \quad X0)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& \quad X1) (u1\_struct\_0 X0)))))) \Rightarrow ((v3\_waybel\_1 (k1\_waybel\_1 X0 X1 X2 \\
& \quad X3) X0 X1) \Leftrightarrow ((v5\_orders\_3 X3 X1 X0) \wedge (\forall X4.(m1\_subset\_1 X4 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow (r4\_waybel\_1 X1 (k3\_funct\_2 (u1\_struct\_0 X0) \\
& \quad (u1\_struct\_0 X1) X2 X4) (k8\_relset\_1 (u1\_struct\_0 X1) (u1\_struct\_0 \\
& \quad X0) X3 (k5\_waybel\_0 X0 X4))))))))) \tag{2}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \Rightarrow (\forall X2.((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow \\
& ((v5\_waybel\_1 X2 X0 X1) \Leftrightarrow (\exists X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\
& X3 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \wedge (v3\_waybel\_1 \\
& \quad (k1\_waybel\_1 X0 X1 X3 X2) X0 X1)))))) \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge \\
& \quad ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \wedge ( \\
& (\neg v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\
& \quad X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))) \Rightarrow (((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (v5\_waybel\_1 \\
& \quad X2 X1 X0)) \Rightarrow ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) \\
& \quad (u1\_struct\_0 X1)) \wedge (v18\_waybel\_0 X2 X0 X1)))))) \tag{4}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\
& \quad X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\
& \quad X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \Rightarrow ((v3\_lattice3 \\
& X1) \Rightarrow ((v18\_waybel\_0 X2 X1 X0) \Leftrightarrow ((v5\_orders\_3 X2 X1 X0) \wedge (v5\_waybel\_1 \\
& \quad X2 X0 X1))))))
\end{aligned}$$