

# t39\_waybel34 (TMJyKMsAR- BEU77T1LsTXsnnNkCYysu6iRg)

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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  $v3\_waybel\_3 : \iota \Rightarrow o$  be given. Let  $v1\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v3\_lattice3 : \iota \Rightarrow o$  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  $v7\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_waybel34 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_yellow\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v22\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v18\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v17\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_waybel34 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_waybel34 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v4\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\
 & X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge \\
 & (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
 & X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v7\_waybel\_1 X1 X0) \wedge (m1\_subset\_1 \\
 & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow \\
 & ((v4\_waybel\_0 (k1\_yellow\_2 X0 X0 X1) X0) \Leftrightarrow (v22\_waybel\_0 (k3\_waybel\_1 \\
 & X0 X0 X1) (k1\_yellow\_2 X0 X0 X1) X0)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\
& X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge \\
& (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v7\_waybel\_1 X1 X0) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow \\
& ((v18\_waybel\_0 (k2\_waybel\_1 X0 X0 X1) X0 (k1\_yellow\_2 X0 X0 X1)) \wedge \\
& ((v17\_waybel\_0 (k3\_waybel\_1 X0 X0 X1) (k1\_yellow\_2 X0 X0 X1) X0) \wedge \\
& ((r2\_funct\_2 (u1\_struct\_0 (k1\_yellow\_2 X0 X0 X1)) (u1\_struct\_0 \\
& X0) (k2\_waybel34 (k1\_yellow\_2 X0 X0 X1) X0 (k2\_waybel\_1 X0 X0 X1)) \\
& (k3\_waybel\_1 X0 X0 X1)) \wedge (r2\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& (k1\_yellow\_2 X0 X0 X1)) (k1\_waybel34 (k1\_yellow\_2 X0 X0 X1) X0 (k3\_waybel\_1 \\
& X0 X0 X1)) (k2\_waybel\_1 X0 X0 X1))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\
& X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge \\
& (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v4\_yellow\_0 \\
& X1 X0) \wedge ((v7\_yellow\_0 X1 X0) \wedge (m1\_yellow\_0 X1 X0)))) \Rightarrow ((v3\_orders\_2 \\
& X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge ((v1\_lattice3 X1) \wedge \\
& ((v2\_lattice3 X1) \wedge ((v3\_lattice3 X1) \wedge (l1\_orders\_2 X1))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\
& X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge \\
& (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 \\
& X1) \wedge ((v5\_orders\_2 X1) \wedge ((v3\_waybel\_3 X1) \wedge ((v1\_lattice3 X1) \wedge \\
& ((v2\_lattice3 X1) \wedge ((v3\_lattice3 X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) \\
& (u1\_struct\_0 X1)) \wedge ((v17\_waybel\_0 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v1\_waybel34 \\
& (k1\_waybel34 X0 X1 X2) X1 X0) \Rightarrow (v22\_waybel\_0 X2 X0 X1)))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X2) \wedge \\
& ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1)))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\
& X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge \\ & ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))) \wedge ( \\ & (v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)) \wedge ((v7\_waybel\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v1\_orders\_2 (k1\_yellow\_2 \\ & X0 X0 X1)) \wedge ((v4\_yellow\_0 (k1\_yellow\_2 X0 X0 X1) X0) \wedge (v7\_yellow\_0 \\ & (k1\_yellow\_2 X0 X0 X1) X0))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 \\ & X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \wedge ((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\ & ((\neg v2\_struct\_0 (k1\_yellow\_2 X0 X1 X2)) \wedge ((v1\_orders\_2 (k1\_yellow\_2 \\ & X0 X1 X2)) \wedge (v4\_yellow\_0 (k1\_yellow\_2 X0 X1 X2) X1))) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 \\ & X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \wedge ((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\ & ((v1\_funct\_1 (k3\_waybel\_1 X0 X1 X2)) \wedge ((v1\_funct\_2 (k3\_waybel\_1 \\ & X0 X1 X2) (u1\_struct\_0 (k1\_yellow\_2 X0 X1 X2)) (u1\_struct\_0 X1)) \wedge \\ & (m1\_subset\_1 (k3\_waybel\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 (k1\_yellow\_2 X0 X1 X2)) (u1\_struct\_0 X1)))))) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 \\ & X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \wedge ((v1\_funct\_1 X2) \wedge \\ & ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow \\ & ((v1\_funct\_1 (k2\_waybel\_1 X0 X1 X2)) \wedge ((v1\_funct\_2 (k2\_waybel\_1 \\ & X0 X1 X2) (u1\_struct\_0 X0) (u1\_struct\_0 (k1\_yellow\_2 X0 X1 X2))) \wedge \\ & (m1\_subset\_1 (k2\_waybel\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 (k1\_yellow\_2 X0 X1 X2)))))) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 \\ & X0))\wedge(((\neg v2\_struct\_0 X1)\wedge(l1\_orders\_2 X1))\wedge((v1\_funct\_1 X2)\wedge \\ & ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow \\ & ((v1\_orders\_2 (k1\_yellow\_2 X0 X1 X2))\wedge((v4\_yellow\_0 (k1\_yellow\_2 \\ & X0 X1 X2) X1)\wedge(m1\_yellow\_0 (k1\_yellow\_2 X0 X1 X2) X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v3\_orders\_2 X0)\wedge((v4\_orders\_2 \\ & X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_lattice3 X0)\wedge((v2\_lattice3 X0)\wedge \\ & (l1\_orders\_2 X0))))))\wedge(((v3\_orders\_2 X1)\wedge((v4\_orders\_2 X1)\wedge \\ & ((v5\_orders\_2 X1)\wedge((v1\_lattice3 X1)\wedge((v2\_lattice3 X1)\wedge(l1\_orders\_2 \\ & X1))))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X1))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 ( \\ & u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow((v1\_funct\_1 (k1\_waybel34 \\ & X0 X1 X2))\wedge((v1\_funct\_2 (k1\_waybel34 X0 X1 X2) (u1\_struct\_0 X1) \\ & (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (k1\_waybel34 X0 X1 X2) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 \\ & X0)\wedge((v1\_lattice3 X0)\wedge((v2\_lattice3 X0)\wedge((v3\_lattice3 X0)\wedge \\ & (l1\_orders\_2 X0))))))\Rightarrow(\forall X1.(m1\_yellow\_0 X1 X0)\Rightarrow((v7\_yellow\_0 \\ & X1 X0)\Rightarrow(\neg v2\_struct\_0 X1))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow((v2\_lattice3 X0)\Rightarrow(\neg v2\_struct\_0 X0)) \quad (13)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 \\ & X0)\wedge((v3\_waybel\_3 X0)\wedge((v1\_lattice3 X0)\wedge((v2\_lattice3 X0)\wedge \\ & ((v3\_lattice3 X0)\wedge(l1\_orders\_2 X0))))))\Rightarrow(\forall X1.((v1\_funct\_1 \\ & X1)\wedge((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 X0))\wedge((v7\_waybel\_1 \\ & X1 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0))))))\Rightarrow((v1\_waybel34 (k2\_waybel\_1 X0 X0 X1) \\ & X0 (k1\_yellow\_2 X0 X0 X1))\Rightarrow(v4\_waybel\_0 (k1\_yellow\_2 X0 X0 X1) X0))) \end{aligned}$$