

# t17\_waybel19 (TM- SKcrDa37g8KhhkmMXKT7mUKCjQwZKYEtC)

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Let  $v2\_pre\_topc : \iota \Rightarrow o$  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  $v1\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v3\_lattice3 : \iota \Rightarrow o$  be given. Let  $v1\_waybel19 : \iota \Rightarrow o$  be given. Let  $l1\_waybel\_9 : \iota \Rightarrow o$  be given. Let  $m1\_yellow\_9 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_yellow\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k4\_waybel\_2 : \iota \Rightarrow \iota$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v17\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $g1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Let  $r2\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $r1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $r3\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v2\_pre\_topc X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge ((v1\_waybel19 X0) \wedge (l1\_waybel\_9 X0)))))))))) \Rightarrow \\
& (\forall X1.((v2\_pre\_topc X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge ((v1\_lattice3 X1) \wedge ((v2\_lattice3 X1) \wedge ((v3\_lattice3 X1) \wedge ((v1\_waybel19 X1) \wedge (l1\_waybel\_9 X1)))))))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v17\_waybel\_0 X2 X0 X1) \Rightarrow (v5\_pre\_topc X2 X0 X1))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(l1\_orders\_2 X1) \Rightarrow ((g1\_orders\_2 (u1\_struct\_0 X0) (u1\_orders\_2 X0) = g1\_orders\_2 (u1\_struct\_0 X1) (u1\_orders\_2 X1)) \Rightarrow (\forall X2.(r2\_yellow\_0 X0 X2) \Rightarrow (k2\_yellow\_0 X0 X2 = k2\_yellow\_0 X1 X2))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v3\_lattice3 X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.(r1\_yellow\_0 X0 X1) \wedge (r2\_yellow\_0 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \Rightarrow (\forall X2.\forall X3.(g1\_orders\_2 X0 X1 = g1\_orders\_2 X2 X3) \Rightarrow ((X0 = X2) \wedge (X1 = X3))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)) \wedge ((v5\_orders\_2 X1) \wedge (l1\_orders\_2 X1))) \Rightarrow ((v1\_orders\_2 (k3\_yellow\_3 X0 X1)) \wedge (v5\_orders\_2 (k3\_yellow\_3 X0 X1))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \wedge ((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1))) \Rightarrow ((\neg v2\_struct\_0 (k3\_yellow\_3 X0 X1)) \wedge (v1\_orders\_2 (k3\_yellow\_3 X0 X1))) \quad (6)$$

Assume the following.

$$\forall X0.((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v2\_lattice3 X0) \wedge ((v3\_lattice3 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow ((v1\_funct\_1 (k4\_waybel\_2 X0)) \wedge ((v1\_funct\_2 (k4\_waybel\_2 X0) (u1\_struct\_0 (k3\_yellow\_3 X0 X0)) (u1\_struct\_0 X0)) \wedge (v17\_waybel\_0 (k4\_waybel\_2 X0) (k3\_yellow\_3 X0 X0) X0))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge ((v5\_orders\_2 X0) \wedge ((v3\_lattice3 X0) \wedge (l1\_orders\_2 X0)))) \wedge ((\neg v2\_struct\_0 X1) \wedge ((v5\_orders\_2 X1) \wedge ((v3\_lattice3 X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow ((v1\_orders\_2 (k3\_yellow\_3 X0 X1)) \wedge (v3\_lattice3 (k3\_yellow\_3 X0 X1))) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (m1\_subset\_1 (u1\_orders\_2 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))) \quad (9)$$

Assume the following.

$$\forall X0.(l1\_waybel\_9 X0) \Rightarrow ((l1\_pre\_topc X0) \wedge (l1\_orders\_2 X0)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((l1\_orders\_2 X0)\wedge(l1\_orders\_2 X1))\Rightarrow( (v1\_orders\_2 (k3\_yellow\_3 X0 X1))\wedge(l1\_orders\_2 (k3\_yellow\_3 X0 X1))) \quad (11)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(\forall X1.(l1\_waybel\_9 X1)\Rightarrow(( m1\_yellow\_9 X1 X0)\Leftrightarrow(g1\_orders\_2 (u1\_struct\_0 X1) (u1\_orders\_2 X1) = g1\_orders\_2 (u1\_struct\_0 X0) (u1\_orders\_2 X0)))) \quad (12)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 X0))\Rightarrow(\forall X1. ((\neg v2\_struct\_0 X1)\wedge(l1\_orders\_2 X1))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow ((v17\_waybel\_0 X2 X0 X1)\Leftrightarrow(\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow(r3\_waybel\_0 X0 X1 X2 X3)))))) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_orders\_2 X0))\Rightarrow(\forall X1. ((\neg v2\_struct\_0 X1)\wedge(l1\_orders\_2 X1))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1))))))\Rightarrow ((\forall X3.(m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))\Rightarrow ((r3\_waybel\_0 X0 X1 X2 X3)\Leftrightarrow((r2\_yellow\_0 X0 X3)\Rightarrow((r2\_yellow\_0 X1 (k7\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 X3))\wedge(k2\_yellow\_0 X1 (k7\_relset\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 X3) = k3\_funct\_2 (u1\_struct\_0 X0) (u1\_struct\_0 X1) X2 (k2\_yellow\_0 X0 X3)))))))))) \quad (14)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow((v2\_lattice3 X0)\Rightarrow(\neg v2\_struct\_0 X0)) \quad (15)$$

**Theorem 1**

$$\forall X0.((v2\_pre\_topc X0)\wedge((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 X0)\wedge((v1\_lattice3 X0)\wedge((v2\_lattice3 X0)\wedge((v3\_lattice3 X0)\wedge((v1\_waybel19 X0)\wedge(l1\_waybel\_9 X0))))))))))\Rightarrow ((\forall X1.((v2\_pre\_topc X1)\wedge((v3\_orders\_2 X1)\wedge((v4\_orders\_2 X1)\wedge((v5\_orders\_2 X1)\wedge((v1\_lattice3 X1)\wedge((v2\_lattice3 X1)\wedge((v3\_lattice3 X1)\wedge((v1\_waybel19 X1)\wedge(l1\_waybel\_9 X1))))))))))\Rightarrow ((m1\_yellow\_9 X1 (k3\_yellow\_3 X0 X0))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (u1\_struct\_0 X1) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0))))))\Rightarrow ((X2 = k4\_waybel\_2 X0)\Rightarrow(v5\_pre\_topc X2 X1 X0))))))$$