

# t10\_waybel17

(TMG1RGfJk7PLW8AXwbb2GRfAV7xSgogAUb8)

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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  $v1\_lattice3 : \iota \Rightarrow o$  be given. Let  $v2\_lattice3 : \iota \Rightarrow o$  be given. Let  $v24\_waybel\_0 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_waybel11 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_waybel17 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_nattra\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v7\_waybel\_0 : \iota \Rightarrow o$  be given. Let  $v8\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_waybel\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $g1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_toler\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_yellow\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(k9\_xtuple\_0 (k4\_relat\_1 X0) = X0) \wedge (k10\_xtuple\_0 (k4\_relat\_1 X0) = X0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski X0 X1) \Rightarrow (k4\_relat\_1 X0 = k5\_relat\_1 (k4\_relat\_1 X1) X0) \quad (3)$$

Assume the following.

$$\forall X0.k6\_partfun1 X0 = k4\_relat\_1 X0 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X1)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 X0)))\Rightarrow \\ & (k1\_nattra\_1 X0 X1 X2 X3 = k5\_relat\_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v3\_orders\_2 X0)\wedge((v4\_orders\_2 X0)\wedge((v5\_orders\_2 \\ & X0)\wedge((v1\_lattice3 X0)\wedge((v2\_lattice3 X0)\wedge((v24\_waybel\_0 X0)\wedge \\ & (l1\_orders\_2 X0))))))\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge((v3\_orders\_2 \\ & X1)\wedge((v4\_orders\_2 X1)\wedge((v7\_waybel\_0 X1)\wedge((v8\_waybel\_0 X1 X0)\wedge \\ & (l1\_waybel\_0 X1 X0))))))\Rightarrow(k1\_waybel11 X0 X1 = k1\_waybel\_2 X0 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((l1\_struct\_0 X0)\wedge \\ & ((m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X1)))\wedge((v1\_funct\_1 \\ & X3)\wedge((v1\_funct\_2 X3 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X1 (u1\_struct\_0 X0))))))))\Rightarrow(\forall X4.\forall X5. \\ & \forall X6.\forall X7.(g1\_waybel\_0 X0 X1 X2 X3 = g1\_waybel\_0 X4 X5 \\ & X6 X7)\Rightarrow((X0 = X4)\wedge((X1 = X5)\wedge((X2 = X6)\wedge(X3 = X7)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge \\ & (l1\_orders\_2 X0)))\wedge((\neg v1\_xboole\_0 X1)\wedge((v1\_waybel\_0 X1 X0)\wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow((v6\_waybel\_0 \\ & (k4\_waybel17 X0 X1) X0)\wedge(v8\_waybel\_0 (k4\_waybel17 X0 X1) X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge \\ & ((v4\_orders\_2 X0)\wedge(l1\_orders\_2 X0))))\wedge((\neg v1\_xboole\_0 X1)\wedge( \\ & (v1\_waybel\_0 X1 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))))))\Rightarrow((v4\_orders\_2 (k4\_waybel17 X0 X1))\wedge(v6\_waybel\_0 (k4\_waybel17 \\ & X0 X1) X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge \\ & (l1\_orders\_2 X0)))\wedge((\neg v1\_xboole\_0 X1)\wedge((v1\_waybel\_0 X1 X0)\wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))))))\Rightarrow((\neg v2\_struct\_0 \\ & (k4\_waybel17 X0 X1))\wedge((v3\_orders\_2 (k4\_waybel17 X0 X1))\wedge((v6\_waybel\_0 \\ & (k4\_waybel17 X0 X1) X0)\wedge(v7\_waybel\_0 (k4\_waybel17 X0 X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k4\_relat\_1 X0)) \wedge (v1\_funct\_1 (k4\_relat\_1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (m1\_subset\_1 (u1\_orders\_2 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))) \quad (13)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (l1\_struct\_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.(v1\_partfun1 (k6\_partfun1 X0) X0) \wedge (m1\_subset\_1 (k6\_partfun1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \wedge ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow ((v6\_waybel\_0 (k4\_waybel17 X0 X1) X0) \wedge (l1\_waybel\_0 (k4\_waybel17 X0 X1) X0)) \quad (16)$$

Assume the following.

$$\forall X0.v1\_relat\_1 (k4\_relat\_1 X0) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X0) \Rightarrow (m1\_subset\_1 (k1\_toler\_1 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X1))) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X1) \wedge \\ & (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 X0)))) \Rightarrow \\ & ((v1\_funct\_1 (k1\_nattra\_1 X0 X1 X2 X3)) \wedge ((v1\_funct\_2 (k1\_nattra\_1 X0 X1 X2 X3) X3 X1) \wedge (m1\_subset\_1 (k1\_nattra\_1 X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X3 X1)))))) \quad (19) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (v1\_relat\_1 X1) \Rightarrow (k4\_yellow\_2 X0 X1 = k1\_yellow\_0 X0 (k10\_xtuple\_0 \\ & X1))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0)))) \Rightarrow (k4\_waybel17 X0 X1 = g1\_waybel\_0 X0 X1 (k1\_toler\_1 (u1\_orders\_2 \\ & X0) X1) (k1\_nattra\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0) (k6\_partfun1 \\ & (u1\_struct\_0 X0)) X1))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (l1\_waybel\_0 X1 X0) \Rightarrow (k1\_waybel\_2 X0 X1 = k4\_yellow\_2 X0 (u1\_waybel\_0 \\ & X0 X1))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0. (l1\_orders\_2 X0) \Rightarrow ((v1\_lattice3 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v1\_partfun1 X2 X0) \Rightarrow (v1\_funct\_2 X2 X0 X1)) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1\_struct\_0 X0) \wedge (l1\_waybel\_0 X1 X0)) \Rightarrow \\ & ((v6\_waybel\_0 X1 X0) \Rightarrow (X1 = g1\_waybel\_0 X0 (u1\_struct\_0 X1) (u1\_orders\_2 \\ & X1) (u1\_waybel\_0 X0 X1))) \end{aligned} \quad (26)$$

### Theorem 1

$$\begin{aligned} & \forall X0. ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 X0) \wedge ((v5\_orders\_2 \\ & X0) \wedge ((v1\_lattice3 X0) \wedge ((v2\_lattice3 X0) \wedge ((v24\_waybel\_0 X0) \wedge \\ & (l1\_orders\_2 X0))))))) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 X1) \wedge ((v1\_waybel\_0 \\ & X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \Rightarrow (k1\_waybel11 \\ & X0 (k4\_waybel17 X0 X1) = k1\_yellow\_0 X0 X1)) \end{aligned}$$