

## t39\_waybel20

(TMZbFm2gD65CgqcKXjkNKxV5icz4TjxkoFM)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v3\_orders\_2 : \iota \Rightarrow o$  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  $v8\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_waybel20 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v8\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k8\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $k8\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_waybel20 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_funct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_yellow\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow \\
 & \quad (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 \\
 & \quad X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((v1\_partfun1 (k8\_relset\_1 \\
 & \quad (k2\_zfmisc\_1 X0 X0) (k2\_zfmisc\_1 X1 X1) (k16\_funct\_3 X0 X0 X1 X1 X2 \\
 & \quad X2) (k6\_partfun1 X1)) X0) \wedge ((v3\_relat\_2 (k8\_relset\_1 (k2\_zfmisc\_1 \\
 & \quad X0 X0) (k2\_zfmisc\_1 X1 X1) (k16\_funct\_3 X0 X0 X1 X1 X2 X2) (k6\_partfun1 \\
 & \quad X1))) \wedge ((v8\_relat\_2 (k8\_relset\_1 (k2\_zfmisc\_1 X0 X0) (k2\_zfmisc\_1 \\
 & \quad X1 X1) (k16\_funct\_3 X0 X0 X1 X1 X2 X2) (k6\_partfun1 X1))) \wedge (m1\_subset\_1 \\
 & \quad (k8\_relset\_1 (k2\_zfmisc\_1 X0 X0) (k2\_zfmisc\_1 X1 X1) (k16\_funct\_3 \\
 & \quad X0 X0 X1 X1 X2 X2) (k6\_partfun1 X1)) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 \\
 & \quad X0))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. \forall X3. (m1\_subset\_1 X2 ( \\
 & \quad k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (k8\_relset\_1 X0 X1 X2 X3 = k8\_relat\_1 \\
 & \quad X2 X3)
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.k6\_partfun1 X0 = k4\_relat\_1 X0 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((l1\_orders\_2 X0)\wedge((l1\_orders\_2 X1)\wedge((l1\_orders\_2 X2)\wedge((l1\_orders\_2 \\ & X3)\wedge(((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X2))\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X2))))))\wedge((v1\_funct\_1 X5)\wedge((v1\_funct\_2 X5 ( \\ & u1\_struct\_0 X1) (u1\_struct\_0 X3))\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X3))))))))))\Rightarrow(k1\_waybel20 \\ & X0 X1 X2 X3 X4 X5 = k15\_funct\_3 X4 X5) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((v1\_funct\_1 X4)\wedge((v1\_funct\_2 X4 X0 X2)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X2))))\wedge((v1\_funct\_1 X5)\wedge((v1\_funct\_2 X5 X1 X3)\wedge \\ & (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X3))))))\Rightarrow(k16\_funct\_3 \\ & X0 X1 X2 X3 X4 X5 = k15\_funct\_3 X4 X5) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k4\_relat\_1 X0))\wedge((v4\_relat\_1 (k4\_relat\_1 X0) X0)\wedge(v5\_relat\_1 (k4\_relat\_1 X0) X0)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge(v1\_xboole\_0 X1))\Rightarrow(v1\_xboole\_0 (k8\_relat\_1 X0 X1)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_orders\_2 X0)\wedge \\ & (l1\_orders\_2 X0)))\wedge((v1\_funct\_1 X1)\wedge((v1\_funct\_2 X1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0))\wedge((v8\_waybel\_1 X1 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0))))))\Rightarrow((\neg v1\_xboole\_0 \\ & (k4\_waybel20 X0 X1))\wedge(m1\_subset\_1 (k4\_waybel20 X0 X1) (k1\_zfmisc\_1 \\ & (u1\_struct\_0 (k3\_yellow\_3 X0 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.v1\_relat\_1 (k4\_relat\_1 X0) \quad (9)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& ((l1\_orders\_2 X0) \wedge ((l1\_orders\_2 X1) \wedge ((l1\_orders\_2 X2) \wedge ((l1\_orders\_2 \\
& X3) \wedge (((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X2)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X2)))))) \wedge ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 ( \\
& u1\_struct\_0 X1) (u1\_struct\_0 X3)) \wedge (m1\_subset\_1 X5 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X3)))))))))) \Rightarrow (( \\
& v1\_funct\_1 (k1\_waybel20 X0 X1 X2 X3 X4 X5)) \wedge ((v1\_funct\_2 (k1\_waybel20 \\
& X0 X1 X2 X3 X4 X5) (u1\_struct\_0 (k3\_yellow\_3 X0 X1)) (u1\_struct\_0 \\
& (k3\_yellow\_3 X2 X3))) \wedge (m1\_subset\_1 (k1\_waybel20 X0 X1 X2 X3 X4 X5) \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 (k3\_yellow\_3 X0 X1)) ( \\
& u1\_struct\_0 (k3\_yellow\_3 X2 X3))))))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\
& (((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 X0 X2) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X2)))))) \wedge ((v1\_funct\_1 X5) \wedge ((v1\_funct\_2 X5 X1 X3) \wedge \\
& (m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X3)))))) \Rightarrow ((v1\_funct\_1 \\
& (k16\_funct\_3 X0 X1 X2 X3 X4 X5)) \wedge ((v1\_funct\_2 (k16\_funct\_3 X0 X1 \\
& X2 X3 X4 X5) (k2\_zfmisc\_1 X0 X1) (k2\_zfmisc\_1 X2 X3)) \wedge (m1\_subset\_1 \\
& (k16\_funct\_3 X0 X1 X2 X3 X4 X5) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1) (k2\_zfmisc\_1 X2 X3))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge (l1\_orders\_2 \\
& X0))) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)) \wedge ((v8\_waybel\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow (k4\_waybel20 \\
& X0 X1 = k8\_relset\_1 (u1\_struct\_0 (k3\_yellow\_3 X0 X0)) (u1\_struct\_0 \\
& (k3\_yellow\_3 X0 X0)) (k1\_waybel20 X0 X0 X0 X0 X1 X1) (k6\_partfun1 \\
& (u1\_struct\_0 X0)))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v5\_relat\_1 \\
& X1 X0)) \Rightarrow ((v1\_xboole\_0 X1) \wedge ((v1\_relat\_1 X1) \wedge (v5\_relat\_1 X1 X0))))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2)
\end{aligned} \tag{14}$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge (l1\_orders\_2 \\ & X0))) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 \\ & X0) (u1\_struct\_0 X0)) \wedge ((v8\_waybel\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v1\_partfun1 \\ & (k4\_waybel20 X0 X1) (u1\_struct\_0 X0)) \wedge ((v3\_relat\_2 (k4\_waybel20 \\ & X0 X1)) \wedge ((v8\_relat\_2 (k4\_waybel20 X0 X1)) \wedge (m1\_subset\_1 (k4\_waybel20 \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ & X0)))))))))) \end{aligned}$$