

## t6\_waybel34

(TMP5ZaPAgrZhdWVaZ3i8aZ75k8NQPEJXTZR)

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Let  $v2\_struct.0 : \iota \Rightarrow o$  be given. Let  $l1\_orders.2 : \iota \Rightarrow o$  be given. Let  $v3\_waybel.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_waybel.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole.0 : \iota \Rightarrow o$  be given. Let  $k1\_funct.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relat.1 : \iota \Rightarrow \iota$  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  $k1\_zfmisc.1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc.1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct.0 : \iota \Rightarrow \iota$  be given. Let  $v6\_waybel.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v23\_waybel.0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct.0 : \iota \Rightarrow o$  be given. Let  $v1\_relat.1 : \iota \Rightarrow o$  be given. Let  $v4\_relat.1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_waybel.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_orders.3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_orders.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v11\_quantal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset.1 X0 X1) \Rightarrow ((v1\_xboole.0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (k1\_funct.1 (k4\_relat.1 X1) X0 = X0) \quad (2)$$

Assume the following.

$$\forall X0. k6\_partfun1 X0 = k4\_relat.1 X0 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole.0 X0) \wedge \\ & (((v1\_funct.1 X2) \wedge ((v1\_funct.2 X2 X0 X1) \wedge (m1\_subset.1 X2 (k1\_zfmisc.1 \\ & (k2\_zfmisc.1 X0 X1)))))) \wedge (m1\_subset.1 X3 X0))) \Rightarrow (k3\_funct.2 X0 \\ & X1 X2 X3 = k1\_funct.1 X2 X3) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct.0 X0) \wedge (l1\_orders.2 X0)) \Rightarrow ((v1\_funct.1 \\ & (k3\_struct.0 X0)) \wedge ((v1\_funct.2 (k3\_struct.0 X0) (u1\_struct.0 \\ & X0) (u1\_struct.0 X0)) \wedge (v6\_waybel.1 (k3\_struct.0 X0) X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow ((v1\_funct\_1 (k3\_struct\_0 X0)) \wedge ((v1\_funct\_2 (k3\_struct\_0 X0) (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (v23\_waybel\_0 (k3\_struct\_0 X0) X0 X0))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k4\_relat\_1 X0)) \wedge ((v4\_relat\_1 (k4\_relat\_1 X0) X0) \wedge ((v1\_funct\_1 (k4\_relat\_1 X0)) \wedge (v1\_partfun1 (k4\_relat\_1 X0) X0))) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (l1\_struct\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_partfun1 (k6\_partfun1 X0) X0) \wedge (m1\_subset\_1 (k6\_partfun1 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow ((v1\_funct\_1 (k3\_struct\_0 X0)) \wedge ((v1\_funct\_2 (k3\_struct\_0 X0) (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 (k3\_struct\_0 X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((l1\_orders\_2 X0) \wedge ((l1\_orders\_2 X1) \wedge (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))))))) \Rightarrow (m1\_waybel\_1 (k1\_waybel\_1 X0 X1 X2 X3) X0 X1) \quad (12)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (k3\_struct\_0 X0 = k6\_partfun1 (u1\_struct\_0 X0)) \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \Rightarrow (\forall X2.(m1\_waybel\_1 \\
& X2 X0 X1) \Rightarrow ((v3\_waybel\_1 X2 X0 X1) \Leftrightarrow (\exists X3.((v1\_funct\_1 X3) \wedge \\
& ((v1\_funct\_2 X3 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \wedge \\
& (\exists X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X1) \\
& (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X0)))))) \wedge ((X2 = k1\_waybel\_1 X0 X1 \\
& X3 X4) \wedge ((v5\_orders\_3 X3 X0 X1) \wedge ((v5\_orders\_3 X4 X1 X0) \wedge (\forall X5. \\
& (m1\_subset\_1 X5 (u1\_struct\_0 X1)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 \\
& (u1\_struct\_0 X0)) \Rightarrow ((r1\_orders\_2 X1 X5 (k3\_funct\_2 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X1) X3 X6)) \Leftrightarrow (r1\_orders\_2 X0 (k3\_funct\_2 (u1\_struct\_0 \\
& X1) (u1\_struct\_0 X0) X4 X5) X6))))))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)))) \Rightarrow (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0)) \wedge (v6\_waybel\_1 X1 X0))) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge ((v11\_quantal1 X1) \wedge (v5\_orders\_3 \\
& X1 X0 X0))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v1\_partfun1 X2 X0) \Rightarrow (v1\_funct\_2 X2 X0 X1))
\end{aligned} \tag{16}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (v3\_waybel\_1 \\
& (k1\_waybel\_1 X0 X0 (k3\_struct\_0 X0) (k3\_struct\_0 X0)) X0 X0)
\end{aligned}$$