

t11\_waybel10  
(TMRcJ32S8DH5TNqb1uc9Q3ePnNDFdvbjn2q)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k6\_yellow\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_yellow\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $v1\_yellow\_1 : \iota \Rightarrow o$  be given. Let  $k5\_yellow\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k12\_pralg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (X1 \in X0) \Rightarrow (k1\_funct\_1 (k2\_funcop\_1 X0 X2) X1 = X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k7\_funcop\_1 X0 X1 = k2\_funcop\_1 X0 X1 \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 (k2\_funcop\_1 X0 X1)) \wedge ((v4\_relat\_1 (k2\_funcop\_1 X0 X1) X0) \wedge ((v1\_funct\_1 (k2\_funcop\_1 X0 X1)) \wedge (v1\_partfun1 (k2\_funcop\_1 X0 X1) X0))) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.v4\_relat\_1 (k2\_funcop\_1 X0 X1) X0 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v2\_struct\_0 X1)\wedge(l1\_orders\_2 X1))\Rightarrow \\ & ((\neg v2\_struct\_0 (k6\_yellow\_1 X0 X1))\wedge(v1\_orders\_2 (k6\_yellow\_1 \\ & \quad X0 X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(l1\_orders\_2 X1)\Rightarrow(v1\_yellow\_1 (k2\_funcop\_1 X0 X1)) \quad (8)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.(l1\_orders\_2 X1)\Rightarrow((v1\_orders\_2 (k6\_yellow\_1 X0 X1))\wedge(l1\_orders\_2 (k6\_yellow\_1 X0 X1))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(l1\_orders\_2 X1)\Rightarrow(k6\_yellow\_1 X0 X1 = k5\_yellow\_1 X0 (k7\_funcop\_1 X0 X1)) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v4\_relat\_1 X1 X0)\wedge \\ & (v1\_funct\_1 X1)\wedge((v1\_partfun1 X1 X0)\wedge(v1\_yellow\_1 X1))))\Rightarrow( \\ & \forall X2.((v1\_orders\_2 X2)\wedge(l1\_orders\_2 X2))\Rightarrow((X2 = k5\_yellow\_1 \\ & X0 X1)\Leftrightarrow((u1\_struct\_0 X2 = k4\_card\_3 (k12\_pralg\_1 X0 X1))\wedge(\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 X2))\Rightarrow(\forall X4.(m1\_subset\_1 X4 \\ & (u1\_struct\_0 X2))\Rightarrow((X3 \in k4\_card\_3 (k12\_pralg\_1 X0 X1))\Rightarrow((r1\_orders\_2 \\ & X2 X3 X4)\Leftrightarrow(\exists X5.((v1\_relat\_1 X5)\wedge(v1\_funct\_1 X5))\wedge(\exists X6. \\ & ((v1\_relat\_1 X6)\wedge(v1\_funct\_1 X6))\wedge((X5 = X3)\wedge((X6 = X4)\wedge(\forall X7. \\ & \neg(X7 \in X0)\wedge(\forall X8.(l1\_orders\_2 X8)\Rightarrow(\forall X9.(m1\_subset\_1 \\ & X9 (u1\_struct\_0 X8))\Rightarrow(\forall X10.(m1\_subset\_1 X10 (u1\_struct\_0 \\ & X8))\Rightarrow(\neg(X8 = k1\_funct\_1 X1 X7)\wedge((X9 = k1\_funct\_1 X5 X7)\wedge((X10 = k1\_funct\_1 \\ & X6 X7)\wedge(r1\_orders\_2 X8 X9 X10))))))))))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(l1\_orders\_2 X1) \Rightarrow (\forall X2.((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 X0 (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1))))) \Rightarrow (\forall X3.((v1\_funct\_1 \\
& X3) \wedge ((v1\_funct\_2 X3 X0 (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1))))) \Rightarrow ((r1\_yellow\_2 X0 X1 X2 X3) \Leftrightarrow \\
& (\forall X4.\neg(X4 \in X0) \wedge (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 \\
& X1)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X1)) \Rightarrow (\neg(X5 = k1\_funct\_1 \\
& X2 X4) \wedge ((X6 = k1\_funct\_1 X3 X4) \wedge (r1\_orders\_2 X1 X5 X6)))))))))) \\
& \hspace{15em} (13)
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \\
& \hspace{15em} (14)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v2\_struct\_0 X1) \wedge (l1\_orders\_2 X1)) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 \\
& X1))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 (u1\_struct\_0 \\
& X1)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 \\
& X1))))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 (k6\_yellow\_1 \\
& X0 X1)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 (k6\_yellow\_1 \\
& X0 X1)) \Rightarrow (((X4 = X2) \wedge (X5 = X3)) \Rightarrow ((r1\_orders\_2 (k6\_yellow\_1 X0 X1) \\
& X4 X5) \Leftrightarrow (r1\_yellow\_2 X0 X1 X2 X3))))))))))
\end{aligned}$$