

t14\_yellow16  
(TMHMF9qqsfN3SmgH3YcqVYmzkZdYA3TC44U)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $v24\_waybel\_0 : \iota \Rightarrow o$  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  $r1\_yellow16 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v22\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_waybel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r2\_yellow16 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v11\_quantal1 : \iota \Rightarrow o$  be given. Let  $v4\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_waybel\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_yellow\_9 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_partfun1 : \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k3\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_orders\_2 : \iota \Rightarrow \iota$  be given. Let  $v5\_orders\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ & X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1. ((\neg \\ & v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\ & X1) \wedge ((v24\_waybel\_0 X1) \wedge (l1\_orders\_2 X1))))))) \Rightarrow (\forall X2. ( \\ & (v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((r1\_yellow16 X0 X1 X2) \Rightarrow (r2\_yellow16 \\ & X0 X1 X2))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. (( \\ & v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (k3\_relat\_1 X1 X0 = k3\_relat\_1 \\ & X1 (k5\_relat\_1 X0 (k10\_xtuple\_0 X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v5\_orders\_2 \\
& X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v3\_orders\_2 \\
& X1) \wedge ((v5\_orders\_2 X1) \wedge (l1\_orders\_2 X1)))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 \\
& X2) \wedge ((v3\_orders\_2 X2) \wedge ((v5\_orders\_2 X2) \wedge (l1\_orders\_2 X2)))) \Rightarrow \\
& (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X0) \\
& (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow (\forall X4.((v1\_funct\_1 \\
& X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X1) (u1\_struct\_0 X2)) \wedge (m1\_subset\_1 \\
& X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X2)))))) \Rightarrow \\
& (((v22\_waybel\_0 X3 X0 X1) \wedge (v22\_waybel\_0 X4 X1 X2)) \Rightarrow (v22\_waybel\_0 \\
& (k1\_partfun1 (u1\_struct\_0 X0) (u1\_struct\_0 X1) (u1\_struct\_0 X1) \\
& (u1\_struct\_0 X2) X3 X4 X0 X2))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\
& X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.((\neg \\
& v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\
& X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\
& X2)) \Rightarrow ((r1\_yellow16 X0 X1 X2) \Rightarrow ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 \\
& (u1\_struct\_0 X1) (u1\_struct\_0 X1)) \wedge ((v11\_quantal1 X2) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 X1))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\
& X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow (\forall X1.((\neg \\
& v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\
& X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\
& X2)) \Rightarrow ((r2\_yellow16 X0 X1 X2) \Rightarrow (k10\_xtuple\_0 X2 = u1\_struct\_0 X0)))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\
& X0) \wedge ((v5\_orders\_2 X0) \wedge (v24\_waybel\_0 X0) \wedge (l1\_orders\_2 X0)))) \Rightarrow \\
& (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v4\_yellow\_0 X1 X0) \wedge ((v4\_waybel\_0 \\
& X1 X0) \wedge (m1\_yellow\_0 X1 X0)))) \Rightarrow (v22\_waybel\_0 (k1\_yellow\_9 X0 X1) \\
& X1 X0))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.k6\_partfun1 X0 = k4\_relat\_1 X0 \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & (((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))\wedge((v1\_funct\_1 X5)\wedge(m1\_subset\_1 X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X2 X3))))\Rightarrow(k1\_partfun1 X0 X1 X2 X3 X4 X5 = k3\_relat\_1 X4 X5) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_relat\_1 (k4\_relat\_1 X0))\wedge((v4\_relat\_1 (k4\_relat\_1 \\ & X0) X0)\wedge((v1\_funct\_1 (k4\_relat\_1 X0))\wedge(v1\_partfun1 (k4\_relat\_1 \\ & X0) X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_orders\_2 X0)\Rightarrow(\forall X1.(m1\_yellow\_0 X1 X0)\Rightarrow \\ & (l1\_orders\_2 X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(l1\_struct\_0 X0) \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((l1\_struct\_0 X0)\wedge(l1\_struct\_0 X1))\Rightarrow( \\ & (v1\_funct\_1 (k1\_yellow\_9 X0 X1))\wedge((v1\_funct\_2 (k1\_yellow\_9 X0 \\ & X1) (u1\_struct\_0 X1) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (k1\_yellow\_9 \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 \\ & X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0)\wedge(v1\_funct\_1 X0))\Rightarrow((v11\_quantal1 \\ & X0)\Leftrightarrow(k3\_relat\_1 X0 X0 = X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0)\Rightarrow(k3\_struct\_0 X0 = k6\_partfun1 (u1\_struct\_0 X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_struct\_0 X0)\Rightarrow(\forall X1.(l1\_struct\_0 X1)\Rightarrow(( \\ & r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 X0))\Rightarrow(k1\_yellow\_9 X0 \\ & X1 = k6\_partfun1 (u1\_struct\_0 X1)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ X0) \wedge ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow (\forall X1.((\neg \\ v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 X1) \wedge ((v5\_orders\_2 \\ X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2.((v1\_relat\_1 X2) \wedge (v1\_funct\_1 \\ X2)) \Rightarrow ((r1\_yellow16 X0 X1 X2) \Leftrightarrow (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ X2 (u1\_struct\_0 X1) (u1\_struct\_0 X0)) \wedge ((v22\_waybel\_0 X2 X1 X0) \wedge \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 \\ X0)))))) \wedge ((k5\_relat\_1 X2 (u1\_struct\_0 X0) = k3\_struct\_0 X0) \wedge \\ ((v4\_yellow\_0 X0 X1) \wedge ((v4\_waybel\_0 X0 X1) \wedge (m1\_yellow\_0 X0 X1)))))))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(l1\_orders\_2 X1) \Rightarrow (( \\ m1\_yellow\_0 X1 X0) \Leftrightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 \\ X0)) \wedge (r1\_tarski (u1\_orders\_2 X1) (u1\_orders\_2 X0)))))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ X0) (u1\_struct\_0 X0)))))) \Rightarrow ((v6\_waybel\_1 X1 X0) \Leftrightarrow ((v11\_quantal1 \\ X1) \wedge (v5\_orders\_3 X1 X0 X0)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge \\ ((v5\_orders\_2 X0) \wedge (l1\_orders\_2 X0)))) \wedge ((\neg v2\_struct\_0 X1) \wedge ( \\ (v3\_orders\_2 X1) \wedge ((v5\_orders\_2 X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\ X1)))) \Rightarrow (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\ X1)) \wedge (v22\_waybel\_0 X2 X0 X1))) \Rightarrow ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (v5\_orders\_3 X2 X0 X1)))))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \end{aligned} \quad (20)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_orders\_2 X0) \wedge ((v4\_orders\_2 \\ X0) \wedge ((v5\_orders\_2 X0) \wedge ((v24\_waybel\_0 X0) \wedge (l1\_orders\_2 X0)))))) \Rightarrow \\ (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v3\_orders\_2 X1) \wedge ((v4\_orders\_2 \\ X1) \wedge ((v5\_orders\_2 X1) \wedge (l1\_orders\_2 X1)))))) \Rightarrow (\forall X2.((v1\_funct\_1 \\ X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)))))) \Rightarrow \\ ((r1\_yellow16 X1 X0 X2) \Rightarrow ((v22\_waybel\_0 X2 X0 X0) \wedge (v6\_waybel\_1 \\ X2 X0)))))) \end{aligned}$$