

t19_waybel_5
(TMGCF1ba3hEBhiT9UrvPeRokqSHm7WbRaJQ)

October 27, 2020

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 $v3_lattice3 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v3_waybel_3 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_reset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_waybel_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_yellow_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_waybel_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_yellow_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_waybel_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_waybel_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 X0) \wedge \\
& (l1_orders_2 X0)))))) \Rightarrow ((\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2. \\
& ((v1_relat_1 X2) \wedge ((v2_relat_1 X2) \wedge ((v4_relat_1 X2 X1) \wedge ((v1_funct_1 \\
& X2) \wedge (v1_partfun1 X2 X1)))))) \Rightarrow (\forall X3.(m2_pboole X3 X1 X2 (k7_funcop_1 \\
& X1 (u1_struct_0 X0))) \Rightarrow ((\forall X4.(m1_subset_1 X4 X1) \Rightarrow (v1_waybel_0 \\
& (k2_reset_1 (u1_struct_0 X0) (k1_waybel_5 X1 (u1_struct_0 X0) \\
& X2 X3 X4)) X0) \Rightarrow (k5_yellow_2 X0 (k4_waybel_5 X0 X3) = k4_yellow_2 \\
& X0 (k5_waybel_5 X0 (k2_waybel_5 X1 (u1_struct_0 X0) X2 X3)))))) \Rightarrow \\
& (v3_waybel_3 X0))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 X0) \wedge \\
& (l1_orders_2 X0)))))) \Rightarrow ((v3_waybel_3 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 \\
& X1) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v2_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 X1) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X1)))))) \Rightarrow (\forall X3. \\
& (m2_pboole X3 X1 X2 (k7_funcop_1 X1 (u1_struct_0 X0))) \Rightarrow ((\forall X4. \\
& (m1_subset_1 X4 X1) \Rightarrow (v1_waybel_0 (k2_relset_1 (u1_struct_0 X0) \\
& (k1_waybel_5 X1 (u1_struct_0 X0) X2 X3 X4)) X0)) \Rightarrow (k5_yellow_2 X0 \\
& (k4_waybel_5 X0 X3) = k4_yellow_2 X0 (k5_waybel_5 X0 (k2_waybel_5 \\
& X1 (u1_struct_0 X0) X2 X3)))))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
& X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_lattice3 X0) \wedge \\
& (l1_orders_2 X0)))))) \Rightarrow ((v3_waybel_3 X0) \Leftrightarrow (\forall X1.(\neg v1_xboole_0 \\
& X1) \Rightarrow (\forall X2.((v1_relat_1 X2) \wedge ((v2_relat_1 X2) \wedge ((v4_relat_1 \\
& X2 X1) \wedge ((v1_funct_1 X2) \wedge (v1_partfun1 X2 X1)))))) \Rightarrow (\forall X3. \\
& (m2_pboole X3 X1 X2 (k7_funcop_1 X1 (u1_struct_0 X0))) \Rightarrow ((\forall X4. \\
& (m1_subset_1 X4 X1) \Rightarrow (v1_waybel_0 (k2_relset_1 (u1_struct_0 X0) \\
& (k1_waybel_5 X1 (u1_struct_0 X0) X2 X3 X4)) X0)) \Rightarrow (k5_yellow_2 X0 \\
& (k4_waybel_5 X0 X3) = k4_yellow_2 X0 (k5_waybel_5 X0 (k2_waybel_5 \\
& X1 (u1_struct_0 X0) X2 X3)))))))))
\end{aligned}$$