

t15_dilworth
(TMUMLp7pUYQGfkdpp4VjAXfDRBvHNNokvSe)

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Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_dilworth : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_dilworth : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(l1_orders_2 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow (((v1_dilworth X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0)))) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\neg(X2 \in X1) \wedge \\ ((X3 \in X1) \wedge ((X2 \neq X3) \wedge ((\neg r1_orders_2 X0 X2 X3) \wedge (\neg r1_orders_2 X0 \\ X3 X2)))))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_orders_2 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow ((v2_dilworth X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 \\ X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ X0)) \Rightarrow (((X2 \in X1) \wedge (X3 \in X1)) \Rightarrow ((X2 = X3) \vee ((\neg r1_orders_2 X0 X2 X3) \wedge \\ (\neg r1_orders_2 X0 X3 X2)))))))))) \end{aligned} \quad (3)$$

Theorem 1

$$\begin{aligned} \forall X0.(l1_orders_2 X0) \Rightarrow (\forall X1.((v1_dilworth X1 X0) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2. \\ ((v2_dilworth X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ X0)))) \Rightarrow (\forall X3.\forall X4.((X3 \in X2) \wedge ((X4 \in X2) \wedge ((X3 \in X1) \wedge \\ (X4 \in X1)))) \Rightarrow (X3 = X4)))) \end{aligned}$$