

# t8\_dilworth (TMKmGhepxZynDKf- suQ7MWxtFp1g7zC2m6RY)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_dilworth : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k2\_tarSKI : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(l1\_orders\_2 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0))) \Rightarrow (((v1\_dilworth X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 X0)))) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg(X2 \in X1) \wedge \\ ((X3 \in X1) \wedge ((X2 \neq X3) \wedge ((\neg r1\_orders\_2 X0 X2 X3) \wedge (\neg r1\_orders\_2 X0 \\ X3 X2)))))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0) \wedge ((m1\_subset\_1 \\ X1 X0) \wedge (m1\_subset\_1 X2 X0))) \Rightarrow (k7\_domain\_1 X0 X1 X2 = k2\_tarSKI X1 \\ X2) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 \\ (u1\_struct\_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0) \Rightarrow (l1\_struct\_0 X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0) \wedge ((m1\_subset\_1 \\ X1 X0) \wedge (m1\_subset\_1 X2 X0))) \Rightarrow (m1\_subset\_1 (k7\_domain\_1 X0 X1 X2) \\ (k1\_zfmisc\_1 X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_tarSKI X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarSKI X0 X1 = k2\_tarSKI X1 X0 \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_orders\_2 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow (((r1\_orders\_2 X0 X1 X2) \vee (r1\_orders\_2 X0 X2 \\ & X1)) \Rightarrow ((v1\_dilworth (k7\_domain\_1 (u1\_struct\_0 X0) X1 X2) X0) \wedge \\ & m1\_subset\_1 (k7\_domain\_1 (u1\_struct\_0 X0) X1 X2) (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)))))) \end{aligned}$$