t30_dilworth (TMLkPGxkJu-JgCy3GcZbqVjsKDKUkEYFCeTd)

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Let $l1\_orders\_2 : \iota \Rightarrow o$ 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 $k5\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_orders\_2 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l1\_orders\_2\ X0) \Rightarrow (\forall X1.((v4\_yellow\_0\ X1\ X0) \wedge (m1\_yellow\_0\ X1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X1)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X1)) \Rightarrow (((X4 = X2) \wedge ((X5 = X3) \wedge ((r1\_orders\_2\ X0\ X2\ X3) \wedge (X4 \in u1\_struct\_0\ X1)))) \Rightarrow (r1\_orders\_2\ X1\ X4\ X5)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2)) \wedge (v1\_xboole\_0\ X2)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ X1)) \Leftrightarrow (r1\_tarski\ X0\ X1) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski\ X0\ X1) \wedge (r1\_tarski\ X1\ X2)) \Rightarrow (r1\_tarski\ X0\ X2) \tag{6}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0)\Rightarrow(\forall X1.(m1\_yellow\_0\ X1\ X0)\Rightarrow (l1\_orders\_2\ X1)) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((l1\_orders\_2\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((v1\_orders\_2\ (k5\_yellow\_0\ X0\ X1))\wedge((v4\_yellow\_0\ (k5\_yellow\_0\ X0\ X1)\ X0)\wedge(m1\_yellow\_0\ (k5\_yellow\_0\ X0\ X1)\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((v2\_dilworth\ X1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(((X2\in X1)\wedge(X3\in X1))\Rightarrow((X2=X3)\vee((\neg r1\_orders\_2\ X0\ X2\ X3)\wedge(\neg r1\_orders\_2\ X0\ X3\ X2)))))))) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.((v1\_orders\_2\ X2)\wedge((v4\_yellow\_0\ X2\ X0)\wedge(m1\_yellow\_0\ X2\ X0)))\Rightarrow((X2=k5\_yellow\_0\ X0\ X1)\Leftrightarrow(u1\_struct\_0\ X2=X1)))) \tag{10}$$

Theorem 1

$$\forall X0.(l1\_orders\_2\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.((v2\_dilworth\ X2\ (k5\_yellow\_0\ X0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k5\_yellow\_0\ X0\ X1)))))\Rightarrow((v2\_dilworth\ X2\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))))$$