t45_dilworth (TMakmZXa3Edpo4gY3aayDpPDzES5bS15d6b)

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Let $v4\_dilworth : \iota \Rightarrow o$ be given. Let $l1\_orders\_2 : \iota \Rightarrow o$ be given. Let $v2\_dilworth : \iota \Rightarrow \iota \Rightarrow o$ 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 $k5\_card\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_dilworth : \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_yellow\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $v1\_orders\_2 : \iota \Rightarrow o$ 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 $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v4\_dilworth\ X0) \wedge (l1\_orders\_2\ X0)) \Rightarrow (\forall X1.\ (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (r1\_xxreal\_0\ (k2\_dilworth\ (k5\_yellow\_0\ X0\ X1))\ (k2\_dilworth\ X0))) \tag{1}$$

Assume the following.

$$\forall X0.(l1\_orders\_2\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.((v2\_dilworth\ X2\ X0) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))) \Rightarrow ((v2\_dilworth\ (k9\_subset\_1\ (u1\_struct\_0\ X0)\ X2\ X1)\ (k5\_yellow\_0\ X0\ X1)) \wedge (m1\_subset\_1\ (k9\_subset\_1\ (u1\_struct\_0\ X0)\ X2\ X1)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ (k5\_yellow\_0\ X0\ X1)))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski\ X0\ X1) \Rightarrow (k3\_xboole\_0\ X0\ X1 = X0) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow ((r1\_xxreal\_0\ X0\ X1) \wedge (r1\_xxreal\_0\ X1\ X0)) \Rightarrow (X0 = X1))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)) \Rightarrow (k9\_subset\_1\ X0\ X1\ X2 = k3\_xboole\_0\ X1\ X2) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((v4\_dilworth\ X0)\wedge(l1\_orders\_2\ X0))\wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow((v1\_orders\_2\ (k5\_yellow\_0\ X0\ X1))\wedge((v4\_yellow\_0\ (k5\_yellow\_0\ X0\ X1)\ X0)\wedge(v4\_dilworth\ (k5\_yellow\_0\ X0\ X1))))) \tag{6}$$

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.

$$\forall X0.((v4\_dilworth\ X0)\wedge(l1\_orders\_2\ X0))\Rightarrow(v7\_ordinal1\ (k2\_dilworth\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.((v4\_dilworth\ X0)\wedge(l1\_orders\_2\ X0))\Rightarrow(\forall X1.(v7\_ordinal1\ X1)\Rightarrow((X1 = k2\_dilworth\ X0)\Leftrightarrow((\exists X2.((v1\_finset\_1\ X2)\wedge((v2\_dilworth\ X2\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))\wedge(k5\_card\_1\ X2 = X1))\wedge(\forall X2.((v1\_finset\_1\ X2)\wedge((v2\_dilworth\ X2\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))\Rightarrow(r1\_xxreal\_0\ (k5\_card\_1\ X2)\ X1))))) \tag{10}$$

Assume the following.

$$\forall X0.((v4\_dilworth\ X0)\wedge(l1\_orders\_2\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow((v2\_dilworth\ X1\ X0)\Rightarrow((v1\_finset\_1\ X1)\wedge(v2\_dilworth\ X1\ X0)))) \tag{11}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v1\_xxreal\_0\ X0) \tag{12}$$

Theorem 1

$$\forall X0.((v4\_dilworth\ X0)\wedge(l1\_orders\_2\ X0))\Rightarrow(\forall X1.((v2\_dilworth\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(((k5\_card\_1\ X1 = k2\_dilworth\ X0)\wedge(r1\_tarski\ X1\ X2))\Rightarrow(k2\_dilworth\ (k5\_yellow\_0\ X0\ X2) = k2\_dilworth\ X0))))$$