t52_graph_5 (TMR9CuGVaPgEMMtrztRrdb8hRZ17jReq38X)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l1\_graph\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k3\_finseq\_2 : \iota \Rightarrow \iota$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k4\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1\ X0\ X1) \tag{2}$$

Assume the following.

$$\forall X0 : \iota \Rightarrow \iota.\forall X1.\exists X2.(m1\_subset\_1\ X2\ X1) \wedge (\forall X3.(m1\_subset\_1\ X3\ X1) \Rightarrow (r1\_xxreal\_0\ (X0\ X2)\ (X0\ X3))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k3\_finseq\_2\ X0)))) \Rightarrow (\forall X2.(m1\_graph\_5\ X2\ X0\ X1) \Leftrightarrow (m1\_subset\_1\ X2\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k3\_finseq\_2\ X0)))) \Rightarrow (\forall X2.(m1\_graph\_5\ X2\ X0\ X1) \Rightarrow (m2\_finseq\_1\ X2\ X0)) \tag{5}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge(l1\_graph\_1\ X1))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X1))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X1))\Rightarrow(\forall X4.((\neg v1\_xboole\_0\ X4)\wedge((v1\_finset\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k3\_finseq\_2\ (u4\_struct\_0\ X1))))))\Rightarrow(\neg(X4 = k4\_graph\_5\ X1\ X2\ X3)\wedge(\forall X5.(m2\_finseq\_1\ X5\ (u4\_struct\_0\ X1))\Rightarrow(\neg(X5 \in X4)\wedge(\forall X6.(m2\_finseq\_1\ X6\ (u4\_struct\_0\ X1))\Rightarrow((X6 \in X4)\Rightarrow(r1\_xxreal\_0\ (k10\_graph\_5\ X1\ X5\ X0)\ (k10\_graph\_5\ X1\ X6\ X0))))))))))$$