t64_graph_5 (TMV56LhYzc7NAYEH2SiwyaWzRvbCbQHJ7g1)

October 27, 2020

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 $v6\_graph\_1 : \iota \Rightarrow o$ be given. Let $l1\_graph\_1 : \iota \Rightarrow o$ be given. Let $v7\_graph\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_graph\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r5\_graph\_5 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r8\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ 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 $r7\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_graph\_5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2. ((\neg v2\_struct\_0\ X2) \wedge ((v6\_graph\_1\ X2) \wedge (l1\_graph\_1\ X2))) \Rightarrow (\forall X3. ((v7\_graph\_1\ X3\ X2) \wedge (m2\_graph\_1\ X3\ X2)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X2)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X2)) \Rightarrow (((r5\_graph\_5\ X2\ X1) \wedge ((r8\_graph\_5\ X2\ X4\ X5\ X3\ X0\ X1) \wedge (\forall X6. ((v7\_graph\_1\ X6\ X2) \wedge (m2\_graph\_1\ X6\ X2)) \Rightarrow (\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X2)) \Rightarrow ((r8\_graph\_5\ X2\ X4\ X7\ X6\ X0\ X1) \Rightarrow ((X7 \in X0) \vee (r1\_xxreal\_0\ (k10\_graph\_5\ X2\ X3\ X1)\ (k10\_graph\_5\ X2\ X6\ X1))))))))) \Rightarrow ((X4 = X5) \vee (r7\_graph\_5\ X2\ X4\ X5\ X3\ X1)))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v2\_struct\_0\ X2) \wedge (l1\_graph\_1\ X2)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2)) \Rightarrow (\forall X4. (m1\_subset\_1\ X4\ (u1\_struct\_0\ X2)) \Rightarrow (\forall X5.((v7\_graph\_1\ X5\ X2) \wedge (m2\_graph\_1\ X5\ X2)) \Rightarrow (((r2\_graph\_5\ X2\ X3\ X4\ X5\ X0) \wedge (r1\_tarski\ X0\ X1)) \Rightarrow (r2\_graph\_5\ X2\ X3\ X4\ X5\ X1))))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_graph\_1\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.((v7\_graph\_1\ X3\ X0)\wedge(m2\_graph\_1\ X3\ X0))\Rightarrow(\forall X4.(r2\_graph\_5\ X0\ X1\ X2\ X3\ X4)\Leftrightarrow((r1\_graph\_5\ X0\ X3\ X1\ X2)\wedge(r1\_tarski\ (k7\_subset\_1\ (u1\_struct\_0\ X0)\ (k2\_graph\_5\ X0\ X3)\ (k1\_tarski\ X2))\ X4)))))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_graph\_1\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.((v7\_graph\_1\ X3\ X0)\wedge(m2\_graph\_1\ X3\ X0))\Rightarrow(\forall X4.\forall X5.((v1\_relat\_1\ X5)\wedge(v1\_funct\_1\ X5))\Rightarrow((r8\_graph\_5\ X0\ X1\ X2\ X3\ X4\ X5)\Leftrightarrow((r2\_graph\_5\ X0\ X1\ X2\ X3\ X4)\wedge(\forall X6.((v7\_graph\_1\ X6\ X0)\wedge(m2\_graph\_1\ X6\ X0))\Rightarrow((r2\_graph\_5\ X0\ X1\ X2\ X6\ X4)\Rightarrow(r1\_xxreal\_0\ (k10\_graph\_5\ X0\ X3\ X5)\ (k10\_graph\_5\ X0\ X6\ X5))))))))) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_graph\_1\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.((v7\_graph\_1\ X3\ X0)\wedge(m2\_graph\_1\ X3\ X0))\Rightarrow(\forall X4.((v1\_relat\_1\ X4)\wedge(v1\_funct\_1\ X4))\Rightarrow((r7\_graph\_5\ X0\ X1\ X2\ X3\ X4)\Leftrightarrow((r1\_graph\_5\ X0\ X3\ X1\ X2)\wedge(\forall X5.((v7\_graph\_1\ X5\ X0)\wedge(m2\_graph\_1\ X5\ X0))\Rightarrow((r1\_graph\_5\ X0\ X5\ X1\ X2)\Rightarrow(r1\_xxreal\_0\ (k10\_graph\_5\ X0\ X3\ X4)\ (k10\_graph\_5\ X0\ X5\ X4))))))))) \tag{5}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge((v6\_graph\_1\ X3)\wedge(l1\_graph\_1\ X3)))\Rightarrow(\forall X4.((v7\_graph\_1\ X4\ X3)\wedge(m2\_graph\_1\ X4\ X3))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X3))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X3))\Rightarrow(((r5\_graph\_5\ X3\ X2)\wedge((r8\_graph\_5\ X3\ X5\ X6\ X4\ X0\ X2)\wedge((r1\_tarski\ X0\ X1)\wedge(\forall X7.((v7\_graph\_1\ X7\ X3)\wedge(m2\_graph\_1\ X7\ X3))\Rightarrow(\forall X8.(m1\_subset\_1\ X8\ (u1\_struct\_0\ X3))\Rightarrow((r8\_graph\_5\ X3\ X5\ X8\ X7\ X0\ X2)\Rightarrow((X8\in X0)\vee(r1\_xxreal\_0\ (k10\_graph\_5\ X3\ X4\ X2)\ (k10\_graph\_5\ X3\ X7\ X2))))))))))\Rightarrow((X5=X6)\vee(r8\_graph\_5\ X3\ X5\ X6\ X4\ X1\ X2)))))))$$