t44_algspec1 (TMGh6kFeKrRbGkM4gKxUhyb4LX1GcfEua4e)

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Let $v11\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_instalg1 : \iota \Rightarrow o$ be given. Let $l1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $r1\_algspec1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_algspec1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_algspec1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_relat\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r3\_pua2mss1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_partfun1 : \iota \Rightarrow \iota$ be given. Let $v1\_msualg\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u2\_msualg\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_msualg\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ X1) \Rightarrow ((r1\_tarski\ (k9\_xtuple\_0\ X1)\ X0) \Rightarrow (k5\_relat\_1\ X1\ X0 = X1)) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ X1) \Rightarrow ((r1\_tarski\ (k10\_xtuple\_0\ X1)\ X0) \Rightarrow (k3\_relat\_1\ X1\ (k4\_relat\_1\ X0) = X1)) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v11\_struct\_0\ X0) \wedge ((v1\_instalg1\ X0) \wedge (l1\_msualg\_1\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((r1\_algspec1\ X0\ X1\ X2) \Rightarrow (k2\_algspec1\ X0\ (k1\_algspec1\ (u1\_struct\_0\ X0)\ X1)\ X2 = k2\_algspec1\ X0\ X1\ X2)))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v11\_struct\_0\ X0)\wedge((v1\_instalg1\ X0)\wedge(l1\_msualg\_1\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((r1\_algspec1\ X0\ X1\ X2)\Leftrightarrow(r3\_pua2mss1\ X0\ (k2\_algspec1\ X0\ X1\ X2)\ (k1\_algspec1\ (u1\_struct\_0\ X0)\ X1)\ (k1\_algspec1\ (u4\_struct\_0\ X0)\ X2)))))) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((r1\_algspec1\ X0\ X1\ X2)\Leftrightarrow(r1\_algspec1\ X0\ (k1\_algspec1\ (u1\_struct\_0\ X0)\ X1)\ (k1\_algspec1\ (u4\_struct\_0\ X0)\ X2))))) \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow((r1\_tarski\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1))\Rightarrow(k1\_funct\_4\ X0\ X1 = X1))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.r1\_tarski\ X0\ X0 \tag{7}$$

Assume the following.

$$\forall X0.k6\_partfun1\ X0 = k4\_relat\_1\ X0 \tag{8}$$

Assume the following.

$$\forall X0.k9\_xtuple\_0\ (k4\_relat\_1\ X0) = X0 \tag{9}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k4\_relat\_1\ X0))\wedge(v1\_funct\_1\ (k4\_relat\_1\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k3\_relat\_1\ X0\ X1) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0)))\wedge(((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\wedge((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))))\Rightarrow((\neg v2\_struct\_0\ (k2\_algspec1\ X0\ X1\ X2))\wedge((\neg v11\_struct\_0\ (k2\_algspec1\ X0\ X1\ X2))\wedge((v1\_msualg\_1\ (k2\_algspec1\ X0\ X1\ X2))\wedge(l1\_msualg\_1\ (k2\_algspec1\ X0\ X1\ X2))))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow((v1\_relat\_1\ (k1\_algspec1\ X0\ X1))\wedge((v4\_relat\_1\ (k1\_algspec1\ X0\ X1)\ X0)\wedge((v1\_funct\_1\ (k1\_algspec1\ X0\ X1))\wedge(v1\_partfun1\ (k1\_algspec1\ X0\ X1)\ X0)))) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v11\_struct\_0\ X0)\wedge(l1\_msualg\_1\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((r1\_algspec1\ X0\ X1\ X2)\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge((\neg v11\_struct\_0\ X3)\wedge((v1\_msualg\_1\ X3)\wedge(l1\_msualg\_1\ X3))))\Rightarrow((X3 = k2\_algspec1\ X0\ X1\ X2)\Leftrightarrow((r3\_pua2mss1\ X0\ X3\ (k1\_algspec1\ (u1\_struct\_0\ X0)\ X1)\ (k1\_algspec1\ (u4\_struct\_0\ X0)\ X2))\wedge((u1\_struct\_0\ X3 = k10\_xtuple\_0\ (k1\_algspec1\ (u1\_struct\_0\ X0)\ X1))\wedge(u4\_struct\_0\ X3 = k10\_xtuple\_0\ (k1\_algspec1\ (u4\_struct\_0\ X0)\ X2)))))))))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(k1\_algspec1\ X0\ X1 = k1\_funct\_4\ (k6\_partfun1\ X0)\ (k5\_relat\_1\ X1\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.(l1\_msualg\_1\ X0)\Rightarrow(\forall X1.(l1\_msualg\_1\ X1)\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge(v1\_funct\_1\ X3))\Rightarrow((r3\_pua2mss1\ X0\ X1\ X2\ X3)\Leftrightarrow((k9\_xtuple\_0\ X2 = u1\_struct\_0\ X0)\wedge((k9\_xtuple\_0\ X3 = u4\_struct\_0\ X0)\wedge((r1\_tarski\ (k10\_xtuple\_0\ X2)\ (u1\_struct\_0\ X1))\wedge((r1\_tarski\ (k10\_xtuple\_0\ X3)\ (u4\_struct\_0\ X1))\wedge((k3\_relat\_1\ (u2\_msualg\_1\ X0)\ X2 = k3\_relat\_1\ X3\ (u2\_msualg\_1\ X1))\wedge(\forall X4.\forall X5.((v1\_relat\_1\ X5)\wedge(v1\_funct\_1\ X5))\Rightarrow(((X4 \in u4\_struct\_0\ X0)\wedge(X5 = k1\_funct\_1\ (u1\_msualg\_1\ X0)\ X4))\Rightarrow(k3\_relat\_1\ X5\ X2 = k1\_funct\_1\ (u1\_msualg\_1\ X1)\ (k1\_funct\_1\ X3\ X4)))))))))))) \tag{16}$$

Assume the following.

$$\forall X0.(l1\_msualg\_1\ X0)\Rightarrow(((\neg v11\_struct\_0\ X0)\wedge(v1\_instalg1\ X0))\Rightarrow(\neg v2\_struct\_0\ X0)) \tag{17}$$

Theorem 1

$$\forall X0.((\neg v11\_struct\_0\ X0)\wedge((v1\_instalg1\ X0)\wedge(l1\_msualg\_1\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((r1\_algspec1\ X0\ X1\ X2)\Rightarrow(k2\_algspec1\ X0\ X1\ (k1\_algspec1\ (u4\_struct\_0\ X0)\ X2) = k2\_algspec1\ X0\ X1\ X2))))$$