t41_lopban_4 (TMdk1MsALp13WKFYJy9xdWgNYCmFW6G9wCL)

October 27, 2020

Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v5\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v6\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v7\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v8\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_normsp\_0 : \iota \Rightarrow o$ be given. Let $v4\_normsp\_0 : \iota \Rightarrow o$ be given. Let $v2\_normsp\_1 : \iota \Rightarrow o$ be given. Let $v2\_funcsdom : \iota \Rightarrow o$ be given. Let $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v1\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v3\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v5\_lopban\_2 : \iota \Rightarrow o$ be given. Let $l1\_lopban\_2 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10\_lopban\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_lopban\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k1\_real\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18\_complex1 : \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_lopban\_1 : \iota \Rightarrow o$ be given. Let $v3\_membered : \iota \Rightarrow o$ be given. Let $l1\_normsp\_1 : \iota \Rightarrow o$ be given. Let $l1\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $l2\_normsp\_0 : \iota \Rightarrow o$ be given. Let $l1\_funcsdom : \iota \Rightarrow o$ be given. Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v5\_rlvect\_1\ X0) \wedge ((v6\_rlvect\_1\ X0) \wedge ((v7\_rlvect\_1\ X0) \wedge ((v8\_rlvect\_1\ X0) \wedge ((v3\_normsp\_0\ X0) \wedge ((v4\_normsp\_0\ X0) \wedge ((v2\_normsp\_1\ X0) \wedge ((v2\_funcsdom\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v1\_vectsp\_1\ X0) \wedge ((v3\_vectsp\_1\ X0) \wedge ((v5\_lopban\_2\ X0) \wedge (l1\_lopban\_2\ X0))))))))))))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ k1\_numbers) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ k1\_numbers) \Rightarrow (r1\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ X2)\ (k1\_rlvect\_1\ X0\ X1\ X3))))) \tag{1}$$

Assume the following.

$$
\forall X0.((\neg \mathit{v2\_struct\_0}\ X0)\wedge((\mathit{v13\_algstr\_0}\ X0)\wedge((\mathit{v2\_rlvect\_1}\ X0)\wedge((\mathit{v3\_rlvect\_1}\ X0)\wedge((\mathit{v4\_rlvect\_1}\ X0)\wedge((\mathit{v5\_rlvect\_1}\ X0)\wedge((\mathit{v6\_rlvect\_1}\ X0)\wedge((\mathit{v7\_rlvect\_1}\ X0)\wedge((\mathit{v8\_rlvect\_1}\ X0)\wedge((\mathit{v3\_normsp\_0}\ X0)\wedge((\mathit{v4\_normsp\_0}\ X0)\wedge((\mathit{v2\_normsp\_1}\ X0)\wedge((\mathit{v2\_funcsdom}\ X0)\wedge((\mathit{v3\_group\_1}\ X0)\wedge((\mathit{v1\_vectsp\_1}\ X0)\wedge((\mathit{v3\_vectsp\_1}\ X0)\wedge((\mathit{v5\_lopban\_2}\ X0)\wedge(\mathit{l1\_lopban\_2}\ X0))))))))))))))))))\Rightarrow(\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\ X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X4.(\mathit{m1\_subset\_1}\ X4\ \mathit{k1\_numbers})\Rightarrow(\forall X5.(\mathit{m1\_subset\_1}\ X5\ \mathit{k1\_numbers})\Rightarrow((\mathit{k3\_rlvect\_1}\ X0\ X1\ X2=\mathit{k3\_rlvect\_1}\ X0\ X2\ X1)\wedge((\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k3\_rlvect\_1}\ X0\ X1\ X2)\ X3=\mathit{k3\_rlvect\_1}\ X0\ X1\ (\mathit{k3\_rlvect\_1}\ X0\ X2\ X3))\wedge((\mathit{k3\_rlvect\_1}\ X0\ X1\ (\mathit{k4\_struct\_0}\ X0)=X1)\wedge((\exists X6.(\mathit{m1\_subset\_1}\ X6\ (\mathit{u1\_struct\_0}\ X0))\wedge(\mathit{k3\_rlvect\_1}\ X0\ X1\ X6=\mathit{k4\_struct\_0}\ X0))\wedge((\mathit{k6\_algstr\_0}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X2)\ X3=\mathit{k6\_algstr\_0}\ X0\ X1\ (\mathit{k6\_algstr\_0}\ X0\ X2\ X3))\wedge((\mathit{k1\_rlvect\_1}\ X0\ X1\ \mathit{np\_\_1}=X1)\wedge((\mathit{k1\_rlvect\_1}\ X0\ X1\ \mathit{k6\_numbers}=\mathit{k4\_struct\_0}\ X0)\wedge((\mathit{k1\_rlvect\_1}\ X0\ (\mathit{k4\_struct\_0}\ X0)\ X4=\mathit{k4\_struct\_0}\ X0)\wedge((\mathit{k1\_rlvect\_1}\ X0\ X1\ (\mathit{k1\_real\_1}\ \mathit{np\_\_1})=\mathit{k4\_algstr\_0}\ X0\ X1)\wedge((\mathit{k6\_algstr\_0}\ X0\ X1\ (\mathit{k5\_struct\_0}\ X0)=X1)\wedge((\mathit{k6\_algstr\_0}\ X0\ (\mathit{k5\_struct\_0}\ X0)\ X1=X1)\wedge((\mathit{k6\_algstr\_0}\ X0\ X1\ (\mathit{k3\_rlvect\_1}\ X0\ X2\ X3)=\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X2)\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X3))\wedge((\mathit{k6\_algstr\_0}\ X0\ (\mathit{k3\_rlvect\_1}\ X0\ X2\ X3)\ X1=\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X2\ X1)\ (\mathit{k6\_algstr\_0}\ X0\ X3\ X1))\wedge((\mathit{k1\_rlvect\_1}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X2)\ X4=\mathit{k6\_algstr\_0}\ X0\ (\mathit{k1\_rlvect\_1}\ X0\ X1\ X4)\ X2)\wedge((\mathit{k1\_rlvect\_1}\ X0\ (\mathit{k3\_rlvect\_1}\ X0\ X1\ X2)\ X4=\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k1\_rlvect\_1}\ X0\ X1\ X4)\ (\mathit{k1\_rlvect\_1}\ X0\ X2\ X4))\wedge((\mathit{k1\_rlvect\_1}\ X0\ X1\ (\mathit{k7\_real\_1}\ X4\ X5)=\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k1\_rlvect\_1}\ X0\ X1\ X4)\ (\mathit{k1\_rlvect\_1}\ X0\ X1\ X5))\wedge((\mathit{k1\_rlvect\_1}\ X0\ X1\ (\mathit{k8\_real\_1}\ X4\ X5)=\mathit{k1\_rlvect\_1}\ X0\ (\mathit{k1\_rlvect\_1}\ X0\ X1\ X5)\ X4)\wedge((\mathit{k1\_rlvect\_1}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X2)\ (\mathit{k8\_real\_1}\ X4\ X5)=\mathit{k6\_algstr\_0}\ X0\ (\mathit{k1\_rlvect\_1}\ X0\ X1\ X4)\ (\mathit{k1\_rlvect\_1}\ X0\ X2\ X5))\wedge((\mathit{k1\_rlvect\_1}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X2)\ X4=\mathit{k6\_algstr\_0}\ X0\ X1\ (\mathit{k1\_rlvect\_1}\ X0\ X2\ X4))\wedge((\mathit{k6\_algstr\_0}\ X0\ (\mathit{k4\_struct\_0}\ X0)\ X1=\mathit{k4\_struct\_0}\ X0)\wedge((\mathit{k6\_algstr\_0}\ X0\ X1\ (\mathit{k4\_struct\_0}\ X0)=\mathit{k4\_struct\_0}\ X0)\wedge((\mathit{k6\_algstr\_0}\ X0\ X1\ (\mathit{k5\_algstr\_0}\ X0\ X2\ X3)=\mathit{k5\_algstr\_0}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X2)\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X3))\wedge((\mathit{k6\_algstr\_0}\ X0\ (\mathit{k5\_algstr\_0}\ X0\ X2\ X3)\ X1=\mathit{k5\_algstr\_0}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X2\ X1)\ (\mathit{k6\_algstr\_0}\ X0\ X3\ X1))\wedge((\mathit{k5\_algstr\_0}\ X0\ (\mathit{k3\_rlvect\_1}\ X0\ X1\ X2)\ X3=\mathit{k3\_rlvect\_1}\ X0\ X1\ (\mathit{k5\_algstr\_0}\ X0\ X2\ X3))\wedge((\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k5\_algstr\_0}\ X0\ X1\ X2)\ X3=\mathit{k5\_algstr\_0}\ X0\ X1\ (\mathit{k5\_algstr\_0}\ X0\ X2\ X3))\wedge((\mathit{k5\_algstr\_0}\ X0\ (\mathit{k5\_algstr\_0}\ X0\ X1\ X2)\ X3=\mathit{k5\_algstr\_0}\ X0\ X1\ (\mathit{k3\_rlvect\_1}\ X0\ X2\ X3))\wedge((\mathit{k3\_rlvect\_1}\ X0\ X1\ X2=\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k5\_algstr\_0}\ X0\ X1\ X3)\ (\mathit{k3\_rlvect\_1}\ X0\ X3\ X2))\wedge((\mathit{k5\_algstr\_0}\ X0\ X1\ X2=\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k5\_algstr\_0}\ X0\ X1\ X3)\ (\mathit{k5\_algstr\_0}\ X0\ X3\ X2))\wedge((X1=\mathit{k3\_rlvect\_1}\ X0\ (\mathit{k5\_algstr\_0}\ X0\ X1\ X2)\ X2)\wedge((X1=\mathit{k5\_algstr\_0}\ X0\ X2\ (\mathit{k5\_algstr\_0}\ X0\ X2\ X1))\wedge(((\mathit{k1\_normsp\_0}\ X0\ X1=\mathit{k6\_numbers})\Rightarrow(X1=\mathit{k4\_struct\_0}\ X0))\wedge(((X1=\mathit{k4\_struct\_0}\ X0)\Rightarrow(\mathit{k1\_normsp\_0}\ X0\ X1=\mathit{k6\_numbers}))\wedge((\mathit{k1\_normsp\_0}\ X0\ (\mathit{k1\_rlvect\_1}\ X0\ X1\ X4)=\mathit{k8\_real\_1}\ (\mathit{k18\_complex1}\ X4)\ (\mathit{k1\_normsp\_0}\ X0\ X1))\wedge((\mathit{r1\_xxreal\_0}\ (\mathit{k1\_normsp\_0}\ X0\ (\mathit{k3\_rlvect\_1}\ X0\ X1\ X2))\ (\mathit{k7\_real\_1}\ (\mathit{k1\_normsp\_0}\ X0\ X1)\ (\mathit{k1\_normsp\_0}\ X0\ X2)))\wedge((\mathit{r1\_xxreal\_0}\ (\mathit{k1\_normsp\_0}\ X0\ (\mathit{k6\_algstr\_0}\ X0\ X1\ X2))\ (\mathit{k8\_real\_1}\ (\mathit{k1\_normsp\_0}\ X0\ X1)\ (\mathit{k1\_normsp\_0}\ X0\ X2)))\wedge((\mathit{k1\_normsp\_0}\ X0\ (\mathit{k5\_struct\_0}\ X0)=\mathit{np\_\_1})\wedge(\mathit{v3\_lopban\_1}\ X0)) \quad (2)
$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge((v3\_normsp\_0\ X0)\wedge((v4\_normsp\_0\ X0)\wedge((v2\_normsp\_1\ X0)\wedge((v2\_funcsdom\ X0)\wedge((v3\_group\_1\ X0)\wedge((v1\_vectsp\_1\ X0)\wedge((v3\_vectsp\_1\ X0)\wedge((v5\_lopban\_2\ X0)\wedge(l1\_lopban\_2\ X0))))))))))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((r1\_lopban\_4\ X0\ X1\ X2)\Rightarrow((k10\_lopban\_4\ X0\ (k3\_rlvect\_1\ X0\ X1\ X2) = k6\_algstr\_0\ X0\ (k10\_lopban\_4\ X0\ X1)\ (k10\_lopban\_4\ X0\ X2))\wedge((k10\_lopban\_4\ X0\ (k3\_rlvect\_1\ X0\ X2\ X1) = k6\_algstr\_0\ X0\ (k10\_lopban\_4\ X0\ X2)\ (k10\_lopban\_4\ X0\ X1))\wedge((k10\_lopban\_4\ X0\ (k3\_rlvect\_1\ X0\ X1\ X2) = k10\_lopban\_4\ X0\ (k3\_rlvect\_1\ X0\ X2\ X1))\wedge(r1\_lopban\_4\ X0\ (k10\_lopban\_4\ X0\ X1)\ (k10\_lopban\_4\ X0\ X2)))))))) \tag{3}$$

Assume the following.

$$v3\_membered\ k1\_numbers \tag{4}$$

Assume the following.

$$\forall X0.(l1\_normsp\_1\ X0)\Rightarrow((l1\_rlvect\_1\ X0)\wedge(l2\_normsp\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_lopban\_2\ X0)\Rightarrow((l1\_funcsdom\ X0)\wedge(l1\_normsp\_1\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0)\wedge(l1\_rlvect\_1\ X0))\wedge((m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\wedge(v1\_xreal\_0\ X2)))\Rightarrow(m1\_subset\_1\ (k1\_rlvect\_1\ X0\ X1\ X2)\ (u1\_struct\_0\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.(v3\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(v1\_xreal\_0\ X1)) \tag{8}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v13\_algstr\_0\ X0)\wedge((v2\_rlvect\_1\ X0)\wedge((v3\_rlvect\_1\ X0)\wedge((v4\_rlvect\_1\ X0)\wedge((v5\_rlvect\_1\ X0)\wedge((v6\_rlvect\_1\ X0)\wedge((v7\_rlvect\_1\ X0)\wedge((v8\_rlvect\_1\ X0)\wedge((v3\_normsp\_0\ X0)\wedge((v4\_normsp\_0\ X0)\wedge((v2\_normsp\_1\ X0)\wedge((v2\_funcsdom\ X0)\wedge((v3\_group\_1\ X0)\wedge((v1\_vectsp\_1\ X0)\wedge((v3\_vectsp\_1\ X0)\wedge((v5\_lopban\_2\ X0)\wedge(l1\_lopban\_2\ X0))))))))))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ k1\_numbers)\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ k1\_numbers)\Rightarrow((k6\_algstr\_0\ X0\ (k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ X2))\ (k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ X3)) = k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ (k7\_real\_1\ X2\ X3)))\wedge((k6\_algstr\_0\ X0\ (k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ X3))\ (k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ X2)) = k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ (k7\_real\_1\ X3\ X2)))\wedge((k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ (k7\_real\_1\ X2\ X3)) = k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ (k7\_real\_1\ X3\ X2)))\wedge(r1\_lopban\_4\ X0\ (k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ X2))\ (k10\_lopban\_4\ X0\ (k1\_rlvect\_1\ X0\ X1\ X3)))))))))$$