t51_lpspace2 (TMRoHRHae-CrN4V8B6mqs7ysq1aVDRke1sGN)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_prob\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4\_prob\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_numbers : \iota$ be given. Let $v10\_valued\_0 : \iota \Rightarrow o$ be given. Let $v6\_supinf\_2 : \iota \Rightarrow o$ be given. Let $v4\_measure1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_numbers : \iota$ be given. Let $v2\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k10\_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3\_mesfunc6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_mesfun6c : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k56\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_lpspace2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_lpspace1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge ((v1\_prob\_1\ X1\ X0) \wedge ((v4\_prob\_1\ X1\ X0) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0)))))) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ X1\ k7\_numbers) \wedge ((v10\_valued\_0\ X2) \wedge ((v6\_supinf\_2\ X2) \wedge ((v4\_measure1\ X2\ X0\ X1) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ k7\_numbers)))))))) \Rightarrow (\forall X3.((v1\_funct\_1\ X3) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))) \Rightarrow (\forall X4.((v1\_funct\_1\ X4) \wedge (m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))) \Rightarrow (\forall X5.((v2\_xxreal\_0\ X5) \wedge (m1\_subset\_1\ X5\ k1\_numbers)) \Rightarrow ((\exists X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ (k10\_lpspace2\ X0\ X1\ X2\ X5))) \wedge ((X3 \in X6) \wedge (X4 \in X6))) \Rightarrow ((r1\_lpspace1\ X0\ X1\ X2\ X3\ X4) \wedge ((X3 \in k1\_lpspace2\ X0\ X1\ X2\ X5) \wedge (X4 \in k1\_lpspace2\ X0\ X1\ X2\ X5)))))))))) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge ((v1\_prob\_1\ X1\ X0)\wedge((v4\_prob\_1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X1\ k7\_numbers)\wedge((v10\_valued\_0\ X2)\wedge((v6\_supinf\_2\ X2)\wedge((v4\_measure1\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ k7\_numbers))))))))\Rightarrow(\forall X3.((v2\_xxreal\_0\ X3)\wedge(m1\_subset\_1\ X3\ k1\_numbers))\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(\forall X5.((v1\_funct\_1\ X5)\wedge(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(((X4\in k1\_lpspace2\ X0\ X1\ X2\ X3)\wedge(X5\in k1\_lpspace2\ X0\ X1\ X2\ X3))\Rightarrow((r3\_mesfunc6\ X0\ X1\ X2\ (k2\_mesfun6c\ X3\ X0\ (k56\_valued\_1\ X0\ k1\_numbers\ X4)))\wedge((r3\_mesfunc6\ X0\ X1\ X2\ (k2\_mesfun6c\ X3\ X0\ (k56\_valued\_1\ X0\ k1\_numbers\ X5)))\wedge(r3\_mesfunc6\ X0\ X1\ X2\ (k3\_valued\_1\ X0\ k1\_numbers\ k1\_numbers\ (k2\_mesfun6c\ X3\ X0\ (k56\_valued\_1\ X0\ k1\_numbers\ X4))\ (k2\_mesfun6c\ X3\ X0\ (k56\_valued\_1\ X0\ k1\_numbers\ X5))))))))))) \tag{2}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge ((v1\_prob\_1\ X1\ X0)\wedge((v4\_prob\_1\ X1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ X0))))))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X1\ k7\_numbers)\wedge((v10\_valued\_0\ X2)\wedge((v6\_supinf\_2\ X2)\wedge((v4\_measure1\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ k7\_numbers))))))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(\forall X4.((v2\_xxreal\_0\ X4)\wedge(m1\_subset\_1\ X4\ k1\_numbers))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ (k10\_lpspace2\ X0\ X1\ X2\ X4)))\Rightarrow((X3\in X5)\Rightarrow((r3\_mesfunc6\ X0\ X1\ X2\ (k2\_mesfun6c\ X4\ X0\ (k56\_valued\_1\ X0\ k1\_numbers\ X3)))\wedge(X3\in k1\_lpspace2\ X0\ X1\ X2\ X4))))))))$$