l15_ringcat1 (TMLXbis7yUxn9jQJXQ4bGba5DSJttSiHsAG)

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Let $v3\_ringcat1 : \iota \Rightarrow o$ be given. Let $l1\_ringcat1 : \iota \Rightarrow o$ be given. 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 $v3\_group\_1 : \iota \Rightarrow o$ be given. Let $v4\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $v5\_vectsp\_1 : \iota \Rightarrow o$ be given. Let $l6\_algstr\_0 : \iota \Rightarrow o$ be given. Let $r1\_ringcat1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_ringcat1 : \iota \Rightarrow \iota$ be given. Let $k2\_ringcat1 : \iota \Rightarrow \iota$ be given. Let $m1\_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g1\_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_ringcat1 : \iota \Rightarrow \iota$ be given. Let $u2\_ringcat1 : \iota \Rightarrow \iota$ be given. Let $u3\_ringcat1 : \iota \Rightarrow \iota$ 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 $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_ringcat1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v3\_group\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge (l6\_algstr\_0\ X1))))))))) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)))))) \Rightarrow ((v1\_ringcat1\ X2\ X0\ X1) \Rightarrow (m1\_ringcat1\ (g1\_ringcat1\ X0\ X1\ X2)\ X0\ X1)))) \tag{1}$$

Assume the following.

$$\forall X0.((v3\_ringcat1\ X0) \wedge (l1\_ringcat1\ X0)) \Rightarrow (v1\_ringcat1\ (u3\_ringcat1\ X0)\ (u1\_ringcat1\ X0)\ (u2\_ringcat1\ X0)) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_ringcat1\ X0) \Rightarrow ((v1\_funct\_1\ (u3\_ringcat1\ X0)) \wedge ((v1\_funct\_2\ (u3\_ringcat1\ X0)\ (u1\_struct\_0\ (u1\_ringcat1\ X0))\ (u1\_struct\_0\ (u2\_ringcat1\ X0))) \wedge (m1\_subset\_1\ (u3\_ringcat1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ (u1\_ringcat1\ X0))\ (u1\_struct\_0\ (u2\_ringcat1\ X0))))))) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_ringcat1\ X0) \Rightarrow ((\neg v2\_struct\_0\ (k2\_ringcat1\ X0)) \wedge ((v13\_algstr\_0\ (k2\_ringcat1\ X0)) \wedge ((v2\_rlvect\_1\ (k2\_ringcat1\ X0)) \wedge ((v3\_rlvect\_1\ (k2\_ringcat1\ X0)) \wedge ((v4\_rlvect\_1\ (k2\_ringcat1\ X0)) \wedge ((v3\_group\_1\ (k2\_ringcat1\ X0)) \wedge ((v4\_vectsp\_1\ (k2\_ringcat1\ X0)) \wedge ((v5\_vectsp\_1\ (k2\_ringcat1\ X0)) \wedge (l6\_algstr\_0\ (k2\_ringcat1\ X0)))))))))) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_ringcat1\ X0) \Rightarrow ((\neg v2\_struct\_0\ (k1\_ringcat1\ X0)) \wedge ((v13\_algstr\_0\ (k1\_ringcat1\ X0)) \wedge ((v2\_rlvect\_1\ (k1\_ringcat1\ X0)) \wedge ((v3\_rlvect\_1\ (k1\_ringcat1\ X0)) \wedge ((v4\_rlvect\_1\ (k1\_ringcat1\ X0)) \wedge ((v3\_group\_1\ (k1\_ringcat1\ X0)) \wedge ((v4\_vectsp\_1\ (k1\_ringcat1\ X0)) \wedge ((v5\_vectsp\_1\ (k1\_ringcat1\ X0)) \wedge (l6\_algstr\_0\ (k1\_ringcat1\ X0)))))))))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v3\_group\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge (l6\_algstr\_0\ X1))))))))) \Rightarrow ((r1\_ringcat1\ X0\ X1) \Leftrightarrow (\exists X2.((v3\_ringcat1\ X2) \wedge (l1\_ringcat1\ X2)) \wedge ((k1\_ringcat1\ X2 = X0) \wedge (k2\_ringcat1\ X2 = X1))))) \tag{6}$$

Assume the following.

$$\forall X0.(l1\_ringcat1\ X0) \Rightarrow (k2\_ringcat1\ X0 = u2\_ringcat1\ X0) \tag{7}$$

Assume the following.

$$\forall X0.(l1\_ringcat1\ X0) \Rightarrow (k1\_ringcat1\ X0 = u1\_ringcat1\ X0) \tag{8}$$

Theorem 1

$$\forall X0.((v3\_ringcat1\ X0)\wedge(l1\_ringcat1\ X0))\Rightarrow(\exists X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1)))))))))\wedge(\exists X2.((\neg v2\_struct\_0\ X2)\wedge((v13\_algstr\_0\ X2)\wedge((v2\_rlvect\_1\ X2)\wedge((v3\_rlvect\_1\ X2)\wedge((v4\_rlvect\_1\ X2)\wedge((v3\_group\_1\ X2)\wedge((v4\_vectsp\_1\ X2)\wedge((v5\_vectsp\_1\ X2)\wedge(l6\_algstr\_0\ X2)))))))))\wedge((r1\_ringcat1\ X1\ X2)\wedge((k1\_ringcat1\ X0 = X1)\wedge((k2\_ringcat1\ X0 = X2)\wedge(m1\_ringcat1\ (g1\_ringcat1\ (u1\_ringcat1\ X0)\ (u2\_ringcat1\ X0)\ (u3\_ringcat1\ X0))\ X1\ X2))))))$$