t6_modcat_1 (TMY8Sgdp73LtzX4YFLAUrDsMfvtoLQpVMdN)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_classes2 : \iota \Rightarrow o$ 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 $k1\_mod\_2 : \iota \Rightarrow \iota$ be given. Let $k2\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2\_grcat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k17\_grcat\_1 : \iota \Rightarrow \iota$ be given. Let $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k9\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_modcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0\ X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v4\_vectsp\_1\ X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0))))))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (v1\_classes2\ X1)) \Rightarrow (\exists X2.(X2 \in ReplSep2\ (toset\ (\lambda X3 : \iota.m2\_grcat\_1\ X3\ (k17\_grcat\_1\ X1)))\ (\lambda X3 : \iota.toset\ (\lambda X4 : \iota.m2\_funct\_2\ X4\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ np\_\_1)\ np\_\_1\ (k9\_funct\_2\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ np\_\_1)\ np\_\_1)))\ (\lambda X3 : \iota.\lambda X4 : \iota.True)\ (\lambda X3 : \iota.\lambda X4 : \iota.k4\_tarski\ X3\ X4)) \wedge (r1\_modcat\_1\ X2\ (k1\_mod\_2\ X0)\ X0))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v1\_classes2\ X0)) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1\ X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v3\_group\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge (l6\_algstr\_0\ X1))))))))) \Rightarrow (\forall X2.(X2 = k2\_modcat\_1\ X0\ X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow (\exists X4.(X4 \in ReplSep2\ (toset\ (\lambda X5 : \iota.m2\_grcat\_1\ X5\ (k17\_grcat\_1\ X0)))\ (\lambda X5 : \iota.toset\ (\lambda X6 : \iota.m2\_funct\_2\ X6\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X1)\ np\_\_1)\ np\_\_1\ (k9\_funct\_2\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X1)\ np\_\_1)\ np\_\_1)))\ (\lambda X5 : \iota.\lambda X6 : \iota.True)\ (\lambda X5 : \iota.\lambda X6 : \iota.k4\_tarski\ X5\ X6)) \wedge (r1\_modcat\_1\ X4\ X3\ X1))))) \tag{2}$$

Theorem 1

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v1\_classes2\ X0))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v13\_algstr\_0\ X1)\wedge((v2\_rlvect\_1\ X1)\wedge((v3\_rlvect\_1\ X1)\wedge((v4\_rlvect\_1\ X1)\wedge((v3\_group\_1\ X1)\wedge((v4\_vectsp\_1\ X1)\wedge((v5\_vectsp\_1\ X1)\wedge(l6\_algstr\_0\ X1)))))))))\Rightarrow(k1\_mod\_2\ X1\in k2\_modcat\_1\ X0\ X1))$$