# t11_afproj (TMUjRNzfNHvAZodWsmamUuAS-fYgv5xZ9Svk)

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Let $v7\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_diraf : \iota \Rightarrow o$ be given. Let $l1\_analoaf : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v1\_aff\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_afproj : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r5\_aff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_aff\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_relat\_2 : \iota \Rightarrow o$ be given. Let $v8\_relat\_2 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_afproj : \iota \Rightarrow \iota$ be given. Let $k1\_afproj : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v7\_struct\_0\ X0) \wedge ((v1\_diraf\ X0) \wedge (l1\_analoaf\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow ((v1\_aff\_1\ X1\ X0) \Rightarrow (\forall X2.(X2 \in k5\_afproj\ X0\ X1) \Leftrightarrow (\exists X3.\ (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \wedge ((X2 = X3) \wedge ((v1\_aff\_1\ X3\ X0) \wedge (r1\_aff\_4\ X0\ X1\ X3)))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v7\_struct\_0\ X0) \wedge ((v1\_diraf\ X0) \wedge (l1\_analoaf\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))) \Rightarrow (((v1\_aff\_1\ X1\ X0) \wedge (v1\_aff\_1\ X2\ X0)) \Rightarrow ((r5\_aff\_1\ X0\ X1\ X2) \Leftrightarrow (r1\_aff\_4\ X0\ X1\ X2))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v3\_relat\_2\ X2) \wedge ((v8\_relat\_2\ X2) \wedge ((v1\_partfun1\ X2\ X0) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))))) \Rightarrow (\forall X3.(X3 \in X0) \Rightarrow ((X1 \in k6\_eqrel\_1\ X0\ X0\ X2\ X3) \Leftrightarrow (k6\_eqrel\_1\ X0\ X0\ X2\ X3 = k6\_eqrel\_1\ X0\ X0\ X2\ X1))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v7\_struct\_0\ X0)\wedge((v1\_diraf\ X0)\wedge(l1\_analoaf\ X0)))\wedge((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))))\Rightarrow((r5\_aff\_1\ X0\ X1\ X2)\Rightarrow(r5\_aff\_1\ X0\ X2\ X1)) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v7\_struct\_0\ X0)\wedge((v1\_diraf\ X0)\wedge(l1\_analoaf\ X0)))\Rightarrow((v3\_relat\_2\ (k3\_afproj\ X0))\wedge((v8\_relat\_2\ (k3\_afproj\ X0))\wedge((v1\_partfun1\ (k3\_afproj\ X0)\ (k1\_afproj\ X0))\wedge(m1\_subset\_1\ (k3\_afproj\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_afproj\ X0)\ (k1\_afproj\ X0))))))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v7\_struct\_0\ X0)\wedge((v1\_diraf\ X0)\wedge(l1\_analoaf\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(k5\_afproj\ X0\ X1 = k6\_eqrel\_1\ (k1\_afproj\ X0)\ (k1\_afproj\ X0)\ (k3\_afproj\ X0)\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v7\_struct\_0\ X0)\wedge((v1\_diraf\ X0)\wedge(l1\_analoaf\ X0)))\Rightarrow(k1\_afproj\ X0 = ReplSep\ (toset\ (\lambda X1 : \iota.m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0))))\ (\lambda X1 : \iota.v1\_aff\_1\ X1\ X0)\ (\lambda X1 : \iota.\ X1)) \tag{7}$$

**Theorem 1**

$$\forall X0.((\neg v7\_struct\_0\ X0)\wedge((v1\_diraf\ X0)\wedge(l1\_analoaf\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))\Rightarrow(((v1\_aff\_1\ X1\ X0)\wedge(v1\_aff\_1\ X2\ X0))\Rightarrow((k5\_afproj\ X0\ X1 = k5\_afproj\ X0\ X2)\Leftrightarrow(r5\_aff\_1\ X0\ X1\ X2)))))$$