

# t42\_afproj (TMLbqKDrUK- FELbb2KPRj2wCJZrnGXkBAqbK)

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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  $u1\_incsp\_1 : \iota \Rightarrow \iota$  be given. Let  $k13\_afproj : \iota \Rightarrow \iota$  be given. Let  $u2\_incsp\_1 : \iota \Rightarrow \iota$  be given. Let  $k14\_afproj : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $u3\_incsp\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_afproj : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_incsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_aff\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_afproj : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_aff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_incsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_incsp\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\forall X3. (m1\_subset\_1 \\ & X3 (u1\_incsp\_1 (k13\_afproj X0))) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\ & (u2\_incsp\_1 (k13\_afproj X0)) \Rightarrow (\neg (X1 = X3) \wedge ((k4\_tarski (k6\_afproj \\ & X0 X2) np\_2 = X4) \wedge (r1\_incsp\_1 (k13\_afproj X0) X3 X4))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (u2\_incsp\_1 (k14\_afproj X0))) \Rightarrow (m1\_subset\_1 \\ & (k4\_tarski X1 np\_2) (u2\_incsp\_1 (k13\_afproj X0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 X1 (u2\_incsp\_1 (k14\_afproj X0))) \Leftrightarrow (\exists X2. \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)) \wedge ((X1 = k6\_afproj \\ & X0 X2) \wedge (v1\_aff\_4 X2 X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 (k14\_afproj X0))) \Leftrightarrow (\exists X2. \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \wedge ((X1 = k5\_afproj \\ X0 X2) \wedge (v1\_aff\_1 X2 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (u1\_incsp\_1 (k13\_afproj X0))) \Leftrightarrow (\neg \\ (\neg m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (\forall X2.(m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (\neg (X1 = k5\_afproj X0 X2) \wedge (v1\_aff\_1 \\ X2 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ ((\neg v1\_xboole\_0 X1) \wedge ((m1\_subset\_1 X2 X0) \wedge (m1\_subset\_1 X3 X1)))) \Rightarrow \\ (k1\_domain\_1 X0 X1 X2 X3 = k4\_tarski X2 X3) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. (l1\_incsp\_1 X0) \Rightarrow (\neg v1\_xboole\_0 (u2\_incsp\_1 X0)) \quad (9)$$

Assume the following.

$$\forall X0. (l1\_incsp\_1 X0) \Rightarrow (\neg v1\_xboole\_0 (u1\_incsp\_1 X0)) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ ((v1\_incsp\_1 (k13\_afproj X0)) \wedge (l1\_incsp\_1 (k13\_afproj X0))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1\_incsp\_1 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_incsp\_1 \\ X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u2\_incsp\_1 X0)) \Rightarrow ((r1\_incsp\_1 \\ X0 X1 X2) \Leftrightarrow (k1\_domain\_1 (u1\_incsp\_1 X0) (u2\_incsp\_1 X0) X1 X2 \in u3\_incsp\_1 \\ X0)))) \end{aligned} \quad (12)$$

### Theorem 1

$$\begin{aligned} \forall X0. ((\neg v7\_struct\_0 X0) \wedge ((v1\_diraf X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ (\forall X1. (m1\_subset\_1 X1 (u1\_incsp\_1 (k13\_afproj X0))) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 (u2\_incsp\_1 (k14\_afproj X0))) \Rightarrow ((k4\_tarski X1 \\ (k4\_tarski X2 np\_2) \in u3\_incsp\_1 (k13\_afproj X0)) \Rightarrow (m1\_subset\_1 \\ X1 (u1\_incsp\_1 (k14\_afproj X0)))))) \end{aligned}$$