

# t80\_rlaffin1 (TMZPLmUPpSdG- MVD9jR4SDSjv8bytNzD3Y7g)

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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  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  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  $v1\_rlaffin1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_rlaffin1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 X0)))))))))) \Rightarrow (\forall X1. ((v1\_finset\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (\forall X2. ((v1\_finset\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (((v1\_rlaffin1 X1 X0) \wedge (r1\_tarski (k4\_rlaffin1 X0 X1) (k4\_rlaffin1 X0 X2))) \Rightarrow (r1\_xxreal\_0 (k5\_card\_1 X1) (k5\_card\_1 X2)))))) \quad (2) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 X0)))))))))) \Rightarrow (\forall X1. ((v1\_finset\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (\forall X2. ((v1\_finset\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (((v1\_rlaffin1 X1 X0) \wedge ((k4\_rlaffin1 X0 X1 = k4\_rlaffin1 X0 X2) \wedge (r1\_xxreal\_0 (k5\_card\_1 X2) (k5\_card\_1 X1)))) \Rightarrow (v1\_rlaffin1 X2 X0)))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2.((v1\_rlaffin1 X2 X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0)))) \Rightarrow (\neg(r1\_tarski X2 X1) \wedge (\forall X3.((v1\_rlaffin1 \\ & X3 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (\neg(r1\_tarski \\ & X2 X3) \wedge ((r1\_tarski X3 X1) \wedge (k4\_rlaffin1 X0 X3 = k4\_rlaffin1 X0 X1))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow ((v1\_rlaffin1 X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (u1\_struct\_0 X0))) \Rightarrow (((r1\_tarski X2 X1) \wedge (k4\_rlaffin1 X0 X1 = k4\_rlaffin1 \\ & X0 X2)) \Rightarrow (X1 = X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (7)$$

Assume the following.

$$\forall X0. \exists X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (v1\_xboole\_0 X1) \quad (8)$$

Assume the following.

$$\exists X0. v1\_xboole\_0 X0 \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_rlvect\_1 X0)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow (r1\_tarski X1 \\ & (k4\_rlaffin1 X0 X1))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (l1\_rlvect\_1 X0)) \wedge \\ & ((v1\_xboole\_0 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0)))) \Rightarrow (v1\_xboole\_0 (k4\_rlaffin1 X0 X1))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (l1\_rlvect\_1 X0)) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 \\ & (k4\_rlaffin1 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0. (v1\_finset\_1 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_finset\_1 X1)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow ((v1\_xboole\_0 X1) \Rightarrow (v1\_rlaffin1 X1 X0))) \end{aligned} \quad (14)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\ & X0)))))))))) \Rightarrow (\forall X1. ((v1\_finset\_1 X1) \wedge (m1\_subset\_1 X1 \\ & (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (\forall X2. ((v1\_finset\_1 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))) \Rightarrow (((v1\_rlaffin1 \\ & X1 X0) \wedge ((r1\_tarski (k4\_rlaffin1 X0 X1) (k4\_rlaffin1 X0 X2)) \wedge (k5\_card\_1 \\ & X1 = k5\_card\_1 X2))) \Rightarrow (v1\_rlaffin1 X2 X0)))) \end{aligned}$$