

## t81\_filter\_2

(TMY3PJ9QzUZvN7xpzAt5DDStgcgFV7v7Xhw)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v10\_lattices : \iota \Rightarrow o$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v13\_lattices : \iota \Rightarrow o$  be given. Let  $v15\_lattices : \iota \Rightarrow o$  be given. Let  $k10\_filter\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_filter\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_lattices : \iota \Rightarrow \iota$  be given. Let  $v14\_lattices : \iota \Rightarrow o$  be given. Let  $m2\_nat\_lat : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v18\_lattices : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v21\_lattices : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v20\_lattices : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v13\_lattices \\ & X0) \Rightarrow ((v13\_lattices (k10\_filter\_2 X0 (k6\_filter\_2 X0 X1))) \wedge (k5\_lattices \\ & (k10\_filter\_2 X0 (k6\_filter\_2 X0 X1)) = k5\_lattices X0)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge \\ & (l3\_lattices X0))) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (v14\_lattices \\ & (k10\_filter\_2 X0 (k6\_filter\_2 X0 X1))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1. (m2\_nat\_lat X1 X0) \Rightarrow ((\neg v2\_struct\_0 X1) \wedge ((v10\_lattices \\ & X1) \wedge (l3\_lattices X1)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge \\ & (l3\_lattices X0))) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow ((\neg v1\_xboole\_0 \\ & (k6\_filter\_2 X0 X1)) \wedge ((v18\_lattices (k6\_filter\_2 X0 X1) X0) \wedge \\ & (v21\_lattices (k6\_filter\_2 X0 X1) X0) \wedge (m1\_subset\_1 (k6\_filter\_2 \\ & X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (&((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge \\ &(l3\_lattices X0))) \wedge ((\neg v1\_xboole\_0 X1) \wedge ((v20\_lattices X1 X0) \wedge \\ &((v21\_lattices X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ &X0)))))) \Rightarrow (m2\_nat\_lat (k10\_filter\_2 X0 X1) X0) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ &X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ &X0))) \Rightarrow ((v18\_lattices X1 X0) \Rightarrow (v20\_lattices X1 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. (l3\_lattices X0) \Rightarrow (&((\neg v2\_struct\_0 X0) \wedge ((v13\_lattices \\ &X0) \wedge (v14\_lattices X0))) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge (v15\_lattices X0))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ &X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v13\_lattices \\ &X0) \Rightarrow (v15\_lattices (k10\_filter\_2 X0 (k6\_filter\_2 X0 X1)))))) \end{aligned}$$