

t38\_card\_fil  
(TMYdmuQvusj5NkkNKidyXkePZrKFHacheyR)

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Let  $v1\_finset.1 : \iota \Rightarrow o$  be given. Let  $v1\_card.1 : \iota \Rightarrow o$  be given. Let  $v7\_card\_fil : \iota \Rightarrow o$  be given. Let  $v2\_card.1 : \iota \Rightarrow o$  be given. Let  $m1\_card\_fil : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_card\_fil : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_card\_fil : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_card\_fil : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_card.1 : \iota \Rightarrow \iota$  be given. Let  $v2\_card\_fil : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_wellord2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_finset.1 X0) \wedge ((v1\_card.1 X0) \wedge (\neg v2\_card.1 X0))) \Rightarrow \\ & (\forall X1.(m1\_card\_fil X1 X0) \Rightarrow (\neg(v1\_card\_fil X1 X0) \wedge ((v3\_card\_fil X1 X0) \wedge (r1\_card\_fil X0 X0 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_finset.1 X0) \Rightarrow (\forall X1.(m1\_card\_fil X1 X0) \Rightarrow \\ & (((v3\_card\_fil X1 X0) \wedge (r1\_card\_fil X0 (k1\_card.1 X0) X1)) \Rightarrow ((v2\_card\_fil X1 X0) \vee (v1\_card\_fil X1 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. r2\_wellord2 X0 X0 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_card.1 X1) \Rightarrow ((X1 = k1\_card.1 X0) \Leftrightarrow (r2\_wellord2 X0 X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_finset.1 X0) \wedge (v1\_card.1 X0)) \Rightarrow ((v7\_card\_fil X0) \Leftrightarrow (\exists X1.(m1\_card\_fil X1 X0) \wedge ((r1\_card\_fil X0 X0 X1) \wedge \\ & (\neg v2\_card\_fil X1 X0) \wedge (v3\_card\_fil X1 X0)))) \end{aligned} \quad (5)$$

**Theorem 1**

$$\forall X0.((\neg v1\_finset.1 X0) \wedge (v1\_card.1 X0)) \Rightarrow ((v7\_card\_fil X0) \Rightarrow (v2\_card.1 X0))$$