

# t54\_card\_fin (TMG- mAFu1HDV7nY1aRRaHkiynTpbo8TLifYD)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_tarski : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. k3\_tarski (k2\_xboole\_0 X0 X1) = k2\_xboole\_0 (k3\_tarski X0) (k3\_tarski X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_relat\_1 X2) \Rightarrow (k5\_relat\_1 X2 (k2\_xboole\_0 X0 X1) = k2\_xboole\_0 (k5\_relat\_1 X2 X0) (k5\_relat\_1 X2 X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X0 \in k9\_xtuple\_0 X1) \Rightarrow (k9\_relat\_1 X1 X0 = k1\_tarski (k1\_funct\_1 X1 X0))) \quad (3)$$

Assume the following.

$$\forall X0. k3\_tarski (k1\_tarski X0) = X0 \quad (4)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (\forall X1. (v1\_relat\_1 X1) \Rightarrow (k10\_xtuple\_0 (k2\_xboole\_0 X0 X1) = k2\_xboole\_0 (k10\_xtuple\_0 X0) (k10\_xtuple\_0 X1))) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (k2\_xboole\_0 (k4\_xboole\_0 X1 (k1\_tarski X0)) (k1\_tarski X0) = X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X1)\Rightarrow(k10\_xtuple\_0 (k5\_relat\_1 X1 X0) = k7\_relat\_1 X1 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k6\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1 \quad (8)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(k5\_relat\_1 X0 (k9\_xtuple\_0 X0) = X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X0)\Rightarrow(v1\_relat\_1 (k5\_relat\_1 X0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0)\Rightarrow(\forall X1.k9\_relat\_1 X0 X1 = k7\_relat\_1 X0 (k1\_tarski X1)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (12)$$

**Theorem 1**

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v1\_funct\_1 X1))\Rightarrow((X0 \in k9\_xtuple\_0 X1)\Rightarrow(k3\_tarski (k10\_xtuple\_0 X1) = k2\_xboole\_0 (k3\_tarski (k10\_xtuple\_0 (k5\_relat\_1 X1 (k6\_subset\_1 (k9\_xtuple\_0 X1) (k1\_tarski X0)))))) (k1\_funct\_1 X1 X0)))$$