

# l52\_o\_ring\_1

(TMN5t9AV1fRHhPLiXhwHaPTRbtwdaTMoFHG)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v3\_o\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v13\_o\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_o\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_o\_ring\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (r1\_xxreal\_0 X0 X0) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (2)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (3)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (k3\_finseq\_1 X0 = k1\_card\_1 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7\_ordinal1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge \\ & (l6\_algstr\_0 X1)) \Rightarrow (\forall X2. (m2\_finseq\_1 X2 (u1\_struct\_0 X1)) \Rightarrow \\ & (((v2\_o\_ring\_1 X2 X1) \wedge (r1\_xxreal\_0 X0 (k3\_finseq\_1 X2))) \Rightarrow ((k6\_numbers = \\ & X0) \vee (v13\_o\_ring\_1 (k7\_partfun1 (u1\_struct\_0 X1) X2 X0) X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0) \Rightarrow ((v1\_finset\_1 (k1\_card\_1 X0)) \wedge (v1\_card\_1 (k1\_card\_1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0) \Rightarrow ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v3\_oring\_1 X1 X0) \Leftrightarrow (\exists X2.(m2\_finseq\_1 X2 (u1\_struct\_0 X0)) \wedge ((v2\_oring\_1 X2 X0) \wedge (X1 = k7\_partfun1 (u1\_struct\_0 X0) X2 (k3\_finseq\_1 X2)))))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1.(m2\_finseq\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v2\_oring\_1 X1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 \neq k6\_numbers) \wedge ((v1\_oring\_1 (k7\_partfun1 (u1\_struct\_0 X0) X1 np\_1) X0) \wedge (\forall X2.(v7\_ordinal1 X2) \Rightarrow (\neg (X2 \neq k6\_numbers) \wedge ((\neg r1\_xreal\_0 (k3\_finseq\_1 X1) X2) \wedge (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\neg (v1\_oring\_1 X3 X0) \wedge (k7\_partfun1 (u1\_struct\_0 X0) X1 (k1\_nat\_1 X2 np\_1) = k1\_algstr\_0 X0 (k7\_partfun1 (u1\_struct\_0 X0) X1 X2) X3)))))))))) \quad (10)$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota.v1\_xboole\_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.((v3\_ordinal1 X0) \wedge (v1\_finset\_1 X0)) \Rightarrow (v7\_ordinal1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finset\_1 X0))) \quad (14)$$

Assume the following.

$$\forall X0.(v1\_card\_1 X0) \Rightarrow (v3\_ordinal1 X0) \quad (15)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v3\_oring\_1 X1 X0) \Rightarrow (v13\_oring\_1 \\ X1 X0)))$$