

## t86\_scmpds\_6

(TMEpD7A4GAAMdJ7yxow3fthbwXsd5K7RUoR)

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Let  $v1\_ami\_2 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_scmpds\_2 : \iota$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_compos\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_afinsq\_1 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_scmpds\_6 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_scmpds\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_scmpds\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_scmpds\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_scmpds\_2 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (1)$$

Assume the following.

$$k2\_xcmplx\_0 \ np\_1 \ np\_1 = np\_2 \quad (2)$$

Assume the following.

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

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k5\_numbers) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (k2\_nat\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_compos\_1 k1\_scmpds\_2)) \Rightarrow (\forall X2. ((\neg v1\_xboole\_0 \\ & X2) \wedge ((v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 \\ & X2 (u1\_compos\_1 k1\_scmpds\_2)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_finset\_1 \\ & X2 \wedge (v1\_afinsq\_1 X2)))))) \Rightarrow ((k6\_numbers \in k9\_xtuple\_0 (k1\_scmpds\_4 \\ & (k4\_scmpds\_4 X0 X1) X2)) \wedge (np\_1 \in k9\_xtuple\_0 (k1\_scmpds\_4 (k4\_scmpds\_4 \\ & X0 X1) X2)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_int\_1 X0) \wedge (v1\_int\_1 X1)) \Rightarrow (v1\_int\_1 (k2\_xcmplx\_0 X0 X1)) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_ami\_2 X0) \wedge (m1\_subset\_1 \\ & X0 (u1\_struct\_0 k1\_scmpds\_2))) \wedge ((v1\_int\_1 X1) \wedge (v1\_int\_1 X2))) \Rightarrow \\ & (m1\_subset\_1 (k8\_scmpds\_2 X0 X1 X2) (u1\_compos\_1 k1\_scmpds\_2)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. (v1\_finset\_1 X0) \Rightarrow (m1\_subset\_1 (k5\_card\_1 X0) k4\_ordinal1) \quad (9)$$

Assume the following.

$$\forall X0. (v1\_int\_1 X0) \Rightarrow (m1\_subset\_1 (k3\_scmpds\_2 X0) (u1\_compos\_1 k1\_scmpds\_2)) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmpds\_2))) \Rightarrow \\ & (\forall X1. (v1\_int\_1 X1) \Rightarrow (\forall X2. ((\neg v1\_xboole\_0 X2) \wedge (( \\ & v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 X2 ( \\ & u1\_compos\_1 k1\_scmpds\_2)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_finset\_1 X2) \wedge \\ & (v1\_afinsq\_1 X2)))))) \Rightarrow (k8\_scmpds\_6 X0 X1 X2 = k1\_scmpds\_4 (k4\_scmpds\_4 \\ & (k8\_scmpds\_2 X0 X1 np\_2) (k3\_scmpds\_2 (k2\_nat\_1 (k5\_card\_1 X2) \\ & np\_1))) X2))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k5\_numbers) \wedge (v7\_ordinal1 X1)) \Rightarrow (k2\_nat\_1 X0 X1 = k2\_nat\_1 X1 X0) \quad (12)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (13)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 X0) \Rightarrow (v1\_int\_1 X0) \quad (14)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v1\_ami\_2 X0) \wedge (m1\_subset\_1 X0 (u1\_struct\_0 k1\_scmpds\_2))) \Rightarrow \\ (\forall X1.(v1\_int\_1 X1) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge (( \\ v1\_relat\_1 X2) \wedge ((v4\_relat\_1 X2 k5\_numbers) \wedge ((v5\_relat\_1 X2 ( \\ u1\_compos\_1 k1\_scmpds\_2)) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_finset\_1 X2) \wedge \\ (v1\_afinsq\_1 X2))))))) \Rightarrow ((k6\_numbers \in k9\_xtuple\_0 (k8\_scmpds\_6 \\ X0 X1 X2)) \wedge (np\_1 \in k9\_xtuple\_0 (k8\_scmpds\_6 X0 X1 X2)))))) \end{aligned}$$