

## t73\_comseq\_3

(TMYe2MxPHj4ALprUQZrFsUSb3ysoUuAyCg8)

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Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k2\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k8\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k55\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_power : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_comseq\_3 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_power : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_series\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Let  $k54\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ X1 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k5\_numbers k1\_numbers)))))) \Rightarrow ((\forall X2.(m2\_subset\_1 X2 k1\_numbers \\ k5\_numbers) \Rightarrow ((r1\_xxreal\_0 np\_1 X2) \Rightarrow (k3\_funct\_2 k5\_numbers \\ k1\_numbers X1 X2 = k10\_real\_1 np\_1 (k3\_power X2 X0)))) \Rightarrow ((r1\_xxreal\_0 \\ X0 np\_1) \vee (v1\_series\_1 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ X1 k5\_numbers X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ X0)))))) \wedge (v7\_ordinal1 X2) \Rightarrow (k8\_nat\_1 X0 X1 X2 = k1\_funct\_1 X1 X2) \end{aligned} \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_membered\ X1)\wedge((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\Rightarrow(k55\_valued\_1\ X0\ X1\ X2 = k54\_valued\_1\ X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ k1\_numbers))\Rightarrow(k4\_power\ X0\ X1 = k3\_power\ X0\ X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0)\wedge(((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))))\wedge(m1\_subset\_1\ X3\ X0)))\Rightarrow(k3\_funct\_2\ X0\ X1\ X2\ X3 = k1\_funct\_1\ X2\ X3) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1\_xboole\_0\ X1)\wedge(v1\_membered\ X1))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ X0\ X1)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))\Rightarrow((v1\_funct\_1\ (k54\_valued\_1\ X2))\wedge(v1\_partfun1\ (k54\_valued\_1\ X2)\ X0)) \quad (8)$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1)\wedge(v3\_ordinal1\ k4\_ordinal1) \quad (9)$$

Assume the following.

$$\neg v1\_xboole\_0\ k2\_numbers \quad (10)$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \quad (11)$$

Assume the following.

$$v1\_membered\ k2\_numbers \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Rightarrow(m1\_subset\_1\ X2\ X0)) \quad (13)$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_membered\ X1)\wedge((v1\_funct\_1 \\ & X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow((v1\_funct\_1 \\ & (k55\_valued\_1\ X0\ X1\ X2))\wedge(m1\_subset\_1\ (k55\_valued\_1\ X0\ X1\ X2)\ ( \\ & k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k2\_numbers)\wedge \\ & (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers))))\Rightarrow \\ & ((v2\_comseq\_3\ X0)\Leftrightarrow(v1\_series\_1\ (k55\_valued\_1\ k5\_numbers\ k2\_numbers \\ & X0))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v1\_partfun1\ X2\ X0)\Rightarrow(v1\_funct\_2\ X2\ X0\ X1)) \end{aligned} \quad (19)$$

### Theorem 1

$$\begin{aligned} & \forall X0.((v1\_funct\_1\ X0)\wedge((v1\_funct\_2\ X0\ k5\_numbers\ k2\_numbers)\wedge \\ & (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ k2\_numbers))))\Rightarrow \\ & (\forall X1.(m1\_subset\_1\ X1\ k1\_numbers)\Rightarrow((\forall X2.(m2\_subset\_1 \\ & X2\ k1\_numbers\ k5\_numbers)\Rightarrow((r1\_xreal\_0\ np\_1\ X2)\Rightarrow(k8\_nat\_1 \\ & k1\_numbers\ (k55\_valued\_1\ k5\_numbers\ k2\_numbers\ X0)\ X2 = k10\_real\_1 \\ & np\_1\ (k4\_power\ X2\ X1))))\Rightarrow((r1\_xreal\_0\ X1\ np\_1)\vee(v2\_comseq\_3 \\ & X0)))) \end{aligned}$$