

# t32\_complsp2 (TMYYwL- gykEcp3voG6FKh35unvCTLor8PNDC)

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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  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k17\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_finseqop : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_setwiseo : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k1\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_finseqop : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_numbers : \iota$  be given. Let  $k27\_binop\_2 : \iota$  be given. Let  $k25\_binop\_2 : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_seq\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k5\_complex1 : \iota$  be given. Let  $k16\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $k11\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v4\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v5\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Rightarrow (m2\_finseq\_2 X1 X0 (k4\_finseq\_2 (k3\_finseq\_1 X1) X0)) \quad (1)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow ( \\
& \quad \forall X2.((v3\_card\_1 X2 X1) \wedge (m2\_finseq\_1 X2 X0)) \Rightarrow (\forall X3. \\
& \quad ((v3\_card\_1 X3 X1) \wedge (m2\_finseq\_1 X3 X0)) \Rightarrow (\forall X4.((v1\_funct\_1 \\
& X4) \wedge ((v1\_funct\_2 X4 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))) \Rightarrow (((v2\_binop\_1 X4 X0) \wedge \\
& \quad ((v1\_finseqop X4 X0) \wedge ((v1\_setwiseo X4 X0) \wedge (r2\_relset\_1 k5\_numbers \\
& X0 (k1\_finseqop X0 X0 X0 X4 X2 X3) (k5\_finseq\_2 X0 X1 (k4\_binop\_1 X0 \\
& \quad X4)))) \Rightarrow ((r2\_relset\_1 k5\_numbers X0 X2 (k4\_finseqop X0 X0 X3 ( \\
& \quad k5\_finseqop X0 X4)) \wedge (r2\_relset\_1 k5\_numbers X0 (k4\_finseqop \\
& \quad X0 X0 X2 (k5\_finseqop X0 X4) X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$r2\_funct\_2 k2\_numbers k2\_numbers (k5\_finseqop k2\_numbers k27\_binop\_2) \\
k25\_binop\_2 \tag{3}$$

Assume the following.

$$v1\_finseqop k27\_binop\_2 k2\_numbers \tag{4}$$

Assume the following.

$$k4\_binop\_1 k2\_numbers k27\_binop\_2 = k6\_numbers \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 \\
& (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2) \wedge \\
& ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 X1)))) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 X0 X1) \wedge (m1\_subset\_1 \\
& X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))) \Rightarrow ((r2\_funct\_2 X0 X1 X2 \\
& X3) \Leftrightarrow (X2 = X3))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.(m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2.(m2\_finseq\_2 \\
& X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1))
\end{aligned} \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Leftrightarrow(m1\_finseq\_1 X1 X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_finseq\_1 X0 k2\_numbers)\wedge(m1\_finseq\_1 X1 k2\_numbers))\Rightarrow(k9\_seq\_4 X0 X1 = k1\_valued\_1 X0 X1) \quad (11)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (12)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (13)$$

Assume the following.

$$k5\_complex1 = k1\_xboole\_0 \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers)\Rightarrow(k17\_seq\_4 X0 = k16\_seq\_4 X0) \quad (15)$$

Assume the following.

$$\forall X0.(m1\_finseq\_1 X0 k2\_numbers)\Rightarrow(k11\_seq\_4 X0 = k30\_valued\_1 X0) \quad (16)$$

Assume the following.

$$\begin{aligned} \exists X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ k5\_numbers)))\wedge((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X0)\wedge((v4\_relat\_1 \\ X0 k5\_numbers)\wedge((v5\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 X0)\wedge \\ ((v1\_partfun1 X0 k5\_numbers)\wedge((v1\_funct\_2 X0 k5\_numbers k5\_numbers)\wedge \\ ((v1\_valued\_0 X0)\wedge((v2\_valued\_0 X0)\wedge((v3\_valued\_0 X0)\wedge((v4\_valued\_0 \\ X0)\wedge(v5\_valued\_0 X0)))))))))) \quad (17) \end{aligned}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge((v1\_finseq\_1 X0)\wedge(v1\_valued\_0 X0))))\Rightarrow(m2\_finseq\_1 X0 k2\_numbers) \quad (18)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 X0)))\Rightarrow(k30\_valued\_1 (k30\_valued\_1 X0) = X0) \quad (19)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (20)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k2\_numbers \quad (21)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (22)$$

Assume the following.

$$(v1\_funct\_1 \ k27\_binop\_2) \wedge ((v1\_funct\_2 \ k27\_binop\_2 \ (k2\_zfmisc\_1 \ k2\_numbers \ k2\_numbers) \ k2\_numbers) \wedge ((v1\_binop\_1 \ k27\_binop\_2 \ k2\_numbers) \wedge (v2\_binop\_1 \ k27\_binop\_2 \ k2\_numbers))) \quad (23)$$

Assume the following.

$$(v1\_funct\_1 \ k27\_binop\_2) \wedge ((v1\_funct\_2 \ k27\_binop\_2 \ (k2\_zfmisc\_1 \ k2\_numbers \ k2\_numbers) \ k2\_numbers) \wedge (v1\_setwiseo \ k27\_binop\_2 \ k2\_numbers)) \quad (24)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 \ X1 \ X0) \Rightarrow ((v1\_funct\_1 \ X1) \wedge ((v1\_finseq\_1 \ X1) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ X0)))))) \quad (25)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (26)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 \ X0) \wedge ((v1\_funct\_1 \ X1) \wedge ((v1\_funct\_2 \ X1 \ (k2\_zfmisc\_1 \ X0 \ X0) \ X0) \wedge (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X0) \ X0)))))) \Rightarrow ((v1\_funct\_1 \ (k5\_finseqop \ X0 \ X1)) \wedge ((v1\_funct\_2 \ (k5\_finseqop \ X0 \ X1) \ X0 \ X0) \wedge (m1\_subset\_1 \ (k5\_finseqop \ X0 \ X1) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X0)))))) \quad (27)$$

Assume the following.

$$\forall X0. \forall X1. (v7\_ordinal1 \ X0) \Rightarrow (m1\_finseq\_2 \ (k4\_finseq\_2 \ X0 \ X1) \ X1) \quad (28)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v1\_finseq\_1 \ X0))) \Rightarrow (m2\_subset\_1 \ (k3\_finseq\_1 \ X0) \ k1\_numbers \ k5\_numbers) \quad (29)$$

Assume the following.

$$(v1\_funct\_1 \ k27\_binop\_2) \wedge ((v1\_funct\_2 \ k27\_binop\_2 \ (k2\_zfmisc\_1 \ k2\_numbers \ k2\_numbers) \ k2\_numbers) \wedge (m1\_subset\_1 \ k27\_binop\_2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k2\_numbers \ k2\_numbers) \ k2\_numbers)))) \quad (30)$$

Assume the following.

$$(v1\_funct\_1\ k25\_binop\_2) \wedge ((v1\_funct\_2\ k25\_binop\_2\ k2\_numbers\ k2\_numbers) \wedge (m1\_subset\_1\ k25\_binop\_2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k2\_numbers\ k2\_numbers)))) \quad (31)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k5\_numbers) \Rightarrow (m2\_finseq\_1\ (k16\_seq\_4\ X0)\ k2\_numbers) \quad (32)$$

Assume the following.

$$\forall X0.(m1\_finseq\_1\ X0\ k2\_numbers) \Rightarrow (m2\_finseq\_1\ (k11\_seq\_4\ X0)\ k2\_numbers) \quad (33)$$

Assume the following.

$$\forall X0.(m2\_finseq\_1\ X0\ k2\_numbers) \Rightarrow (k11\_seq\_4\ X0 = k4\_finseqop\ k2\_numbers\ k2\_numbers\ X0\ k25\_binop\_2) \quad (34)$$

Assume the following.

$$\forall X0.(m2\_finseq\_1\ X0\ k2\_numbers) \Rightarrow (\forall X1.(m2\_finseq\_1\ X1\ k2\_numbers) \Rightarrow (k9\_seq\_4\ X0\ X1 = k1\_finseqop\ k2\_numbers\ k2\_numbers\ k2\_numbers\ k27\_binop\_2\ X0\ X1)) \quad (35)$$

Assume the following.

$$\forall X0.(m2\_subset\_1\ X0\ k1\_numbers\ k5\_numbers) \Rightarrow (k16\_seq\_4\ X0 = k5\_finseq\_2\ k2\_numbers\ X0\ k5\_complex1) \quad (36)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_xboole\_0\ X0) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X0))) \Rightarrow (v1\_xboole\_0\ X2)) \quad (37)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \wedge (v7\_ordinal1\ X1)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k4\_finseq\_2\ X1\ X0)) \Rightarrow (v3\_card\_1\ X2\ X1)) \quad (38)$$

Assume the following.

$$\forall X0.(v6\_membered\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v7\_ordinal1\ X1)) \quad (39)$$

**Theorem 1**

$$\forall X0.(((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge ((v1\_finseq\_1\ X0) \wedge (v1\_valued\_0\ X0)))) \Rightarrow (\forall X1.(((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge ((v1\_finseq\_1\ X1) \wedge (v1\_valued\_0\ X1)))) \Rightarrow (((k3\_finseq\_1\ X0 = k3\_finseq\_1\ X1) \wedge (k1\_valued\_1\ X0\ X1 = k17\_seq\_4\ (k3\_finseq\_1\ X0))) \Rightarrow ((X0 = k30\_valued\_1\ X1) \wedge (X1 = k30\_valued\_1\ X0))))))$$