

## t70\_interval1

(TMQ4zw5Nzm7ZUEkUhfHDHwfuyZiYBkA5a9p)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v3\_roughs\_1 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $m2\_interval1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_interval1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_interval1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k23\_interval1 : \iota \Rightarrow \iota$  be given. Let  $k15\_interval1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k14\_interval1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_roughs\_1 X0) \wedge (l1\_orders\_2 X0))) \Rightarrow (\forall X1.(m2\_interval1 X1 X0) \Rightarrow (\forall X2.(m2\_interval1 X2 X0) \Rightarrow (k15\_interval1 X0 (k17\_interval1 X0 X1 X2) = k9\_subset\_1 (u1\_struct\_0 X0) (k15\_interval1 X0 X1) (k15\_interval1 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_roughs\_1 X0) \wedge (l1\_orders\_2 X0))) \Rightarrow (\forall X1.(m2\_interval1 X1 X0) \Rightarrow (\forall X2.(m2\_interval1 X2 X0) \Rightarrow (k14\_interval1 X0 (k17\_interval1 X0 X1 X2) = k9\_subset\_1 (u1\_struct\_0 X0) (k14\_interval1 X0 X1) (k14\_interval1 X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Rightarrow (k3\_xboole\_0 X0 X1 = X0) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 X0)) \Rightarrow (k9\_subset\_1 X0 X1 X2 = k3\_xboole\_0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xtuple\_0 (k4\_tarski X0 X1) = X1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k1\_xtuple\_0 (k4\_tarski X0 X1) = X0 \quad (7)$$

Assume the following.

$$\forall X0.(l1\_orders\_2 X0)\Rightarrow(l1\_struct\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0)\Rightarrow(m1\_subset\_1 (k2\_struct\_0 X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_roughs\_1 X0)\wedge(l1\_orders\_2 X0)))\Rightarrow(m2\_interval (k23\_interval X0) X0) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge((v3\_roughs\_1 X0)\wedge(l1\_orders\_2 X0)))\wedge((m2\_interval X1 X0)\wedge(m2\_interval X2 X0)))\Rightarrow(m2\_interval (k17\_interval X0 X1 X2) X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_roughs\_1 X0)\wedge(l1\_orders\_2 X0)))\wedge(m2\_interval X1 X0))\Rightarrow(m1\_subset\_1 (k15\_interval X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v3\_roughs\_1 X0)\wedge(l1\_orders\_2 X0)))\wedge(m2\_interval X1 X0))\Rightarrow(m1\_subset\_1 (k14\_interval X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (13)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0)\Rightarrow(k2\_struct\_0 X0 = u1\_struct\_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v3\_roughs\_1 X0)\wedge(l1\_orders\_2 X0)))\Rightarrow(k23\_interval X0 = k4\_tarski (k2\_struct\_0 X0) (k2\_struct\_0 X0)) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_roughs\_1 X0) \wedge (l1\_orders\_2 \\ X0))) \Rightarrow (\forall X1.(m2\_interval1 X1 X0) \Rightarrow (\forall X2.(m2\_interval1 \\ X2 X0) \Rightarrow ((r2\_interval1 X0 X1 X2) \Leftrightarrow ((k14\_interval1 X0 X1 = k14\_interval1 \\ X0 X2) \wedge (k15\_interval1 X0 X1 = k15\_interval1 X0 X2)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_roughs\_1 X0) \wedge (l1\_orders\_2 \\ X0))) \Rightarrow (\forall X1.(m2\_interval1 X1 X0) \Rightarrow (k15\_interval1 X0 X1 = k2\_xtuple\_0 \\ X1)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_roughs\_1 X0) \wedge (l1\_orders\_2 \\ X0))) \Rightarrow (\forall X1.(m2\_interval1 X1 X0) \Rightarrow (k14\_interval1 X0 X1 = k1\_xtuple\_0 \\ X1)) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ X0)) \Rightarrow (k9\_subset\_1 X0 X1 X2 = k9\_subset\_1 X0 X2 X1) \end{aligned} \quad (19)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v3\_roughs\_1 X0) \wedge (l1\_orders\_2 \\ X0))) \Rightarrow (\forall X1.(m2\_interval1 X1 X0) \Rightarrow (r2\_interval1 X0 (k17\_interval1 \\ X0 (k23\_interval1 X0) X1) X1)) \end{aligned}$$