

## l35\_realset2

(TMKYUzwLznCo6NJHy71dhRGsYZv4U9rx92r)

October 27, 2020

Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $c4\_realset2 : \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $c5\_realset2 : \iota$  be given. Let  $c7\_realset2 : \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $g2\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_7 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v8\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v10\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\neg v1\_xboole\_0 np\_2 \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (3)$$

Assume the following.

$$k6\_subset\_1 c4\_realset2 (k6\_domain\_1 np\_2 (k1\_funct\_7 k6\_numbers np\_2)) = k6\_domain\_1 np\_2 (k1\_funct\_7 np\_1 np\_2) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ & X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge (m1\_subset\_1 X2 X0)) \Rightarrow (\forall X3. \\ & \forall X4. \forall X5. (g2\_algstr\_0 X0 X1 X2 = g2\_algstr\_0 X3 X4 X5) \Rightarrow \\ & ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. ((v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0. (l2\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (u2\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0. (l1\_algstr\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. m1\_subset\_1 (k1\_funct\_7 X0 X1) X1 \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((l1\_algstr\_0 X0) \wedge ((m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))))) \Rightarrow (m1\_subset\_1 \\ & (k1\_algstr\_0 X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ & X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge (m1\_subset\_1 X2 X0)) \Rightarrow ((v8\_algstr\_0 \\ & (g2\_algstr\_0 X0 X1 X2)) \wedge (l2\_algstr\_0 (g2\_algstr\_0 X0 X1 X2))) \end{aligned} \quad (12)$$

Assume the following.

$$c7\_realset2 = k1\_funct\_7 np\_1 np\_2 \quad (13)$$

Assume the following.

$$c5\_realset2 = k1\_funct\_7 k6\_numbers np\_2 \quad (14)$$

Assume the following.

$$c4\_realset2 = np\_2 \quad (15)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (k4\_struct\_0 X0 = u2\_struct\_0 X0) \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.(l2\_algstr\_0 X0) \Rightarrow ((v4\_rlvect\_1 X0) \Leftrightarrow (\forall X1.( \\ m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k1\_algstr\_0 X0 X1 (k4\_struct\_0 \\ X0) = X1))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_algstr\_0 X0) \Rightarrow ((v3\_rlvect\_1 X0) \Leftrightarrow (\forall X1.( \\ m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow \\ (k1\_algstr\_0 X0 (k1\_algstr\_0 X0 X1 X2) X3 = k1\_algstr\_0 X0 X1 (k1\_algstr\_0 \\ X0 X2 X3)))))) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1\_algstr\_0 X0) \Rightarrow ((v2\_rlvect\_1 X0) \Leftrightarrow (\forall X1.( \\ m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ (u1\_struct\_0 X0)) \Rightarrow (k1\_algstr\_0 X0 X1 X2 = k1\_algstr\_0 X0 X2 X1)))) \end{aligned} \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (20)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((v13\_algstr\_0 X0) \Leftrightarrow (\forall X1.( \\ m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (v10\_algstr\_0 X1 X0))) \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.(l2\_algstr\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ X0)) \Rightarrow ((v10\_algstr\_0 X1 X0) \Leftrightarrow (\exists X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \wedge (k1\_algstr\_0 X0 X1 X2 = k4\_struct\_0 X0)))) \end{aligned} \quad (22)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((v8\_algstr\_0 X0) \Rightarrow (X0 = g2\_algstr\_0 \\ (u1\_struct\_0 X0) (u1\_algstr\_0 X0) (u2\_struct\_0 X0))) \quad (23)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge \\ & (v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ & X2 X0) \Rightarrow (((X0 = k6\_subset\_1 c4\_realset2 (k6\_domain\_1 c4\_realset2 \\ & c5\_realset2)) \wedge (X2 = c7\_realset2)) \Rightarrow ((\neg v2\_struct\_0 (g2\_algstr\_0 \\ & X0 X1 X2)) \wedge (v13\_algstr\_0 (g2\_algstr\_0 X0 X1 X2)) \wedge (v2\_rlvect\_1 \\ & (g2\_algstr\_0 X0 X1 X2)) \wedge (v3\_rlvect\_1 (g2\_algstr\_0 X0 X1 X2)) \wedge \\ & ((v4\_rlvect\_1 (g2\_algstr\_0 X0 X1 X2)) \wedge (l2\_algstr\_0 (g2\_algstr\_0 \\ & X0 X1 X2)))))))))) \end{aligned}$$