

# t19\_realset2 (TM- NUZW8bQm9xzcgZLrZSupEw8y36JYmS46f)

October 27, 2020

Let  $v6\_struct\_0 : \iota \Rightarrow o$  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  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_realset2 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_zfmisc\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k2\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow & (1) \\ (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 X0 \\ (k4\_struct\_0 X0) X1 = k4\_struct\_0 X0)) & \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow & (3) \\ (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 X0 \\ X1 (k4\_struct\_0 X0) = k4\_struct\_0 X0)) & \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (X0 \in k4\_xboole\_0 X1 (k1\_tarski X2)) \Leftrightarrow ((X0 \in X1) \wedge (X0 \neq X2)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge \\ ((v1\_realset2 X0) \wedge (l6\_algstr\_0 X0))))))) \Rightarrow (\forall X1.(m2\_subset\_1 \\ X1 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \Rightarrow (\forall X2.(m2\_subset\_1 \\ X2 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \Rightarrow (\forall X3.(m2\_subset\_1 \\ X3 (u1\_struct\_0 X0) (k8\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 X0 (k6\_algstr\_0 \\ X0 X1 X2) X3 = k6\_algstr\_0 X0 X1 (k6\_algstr\_0 X0 X2 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (7)$$

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. \forall X2.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (k7\_subset\_1 X0 X1 X2 = k4\_xboole\_0 X1 X2) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v7\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_zfmisc\_1 (u1\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.((v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (14)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (16)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k8\_struct\_0 X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l3\_algstr\_0 X0) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 (k6\_algstr\_0 X0 X1 X2) (u1\_struct\_0 X0)) \quad (18)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k2\_struct\_0 X0) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (19)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (k2\_struct\_0 X0 = u1\_struct\_0 X0) \quad (20)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (k8\_struct\_0 X0 = k7\_subset\_1 (u1\_struct\_0 X0) (k2\_struct\_0 X0) (k1\_tarSKI (k4\_struct\_0 X0))) \quad (21)$$

Assume the following.

$$\forall X0.(l4\_struct\_0 X0) \Rightarrow ((\neg v6\_struct\_0 X0) \Rightarrow (\neg v7\_struct\_0 X0)) \quad (22)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v1\_zfmisc\_1 X0) \quad (23)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v5\_vectsp\_1 X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v1\_vectsp\_1 X0) \wedge (v2\_vectsp\_1 X0)))) \quad (24)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (25)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge \\ & ((v1\_realset2 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 \\ & X0 (k6\_algstr\_0 X0 X1 X2) X3 = k6\_algstr\_0 X0 X1 (k6\_algstr\_0 X0 X2 \\ & X3)))))) \end{aligned}$$