

t17\_topreal5  
(TMcQ8H33NpKaSe8YFKPwQtQvbyGzKvxXY1x)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v2\_compts\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_topreal2 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_pscomp\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_pscomp\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k17\_euclid : \iota \Rightarrow \iota$  be given. Let  $k9\_pscomp\_1 : \iota \Rightarrow \iota$  be given. Let  $k18\_euclid : \iota \Rightarrow \iota$  be given. Let  $k7\_pscomp\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \neg (X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0. (v1\_xxreal\_0 X0) \Rightarrow (\forall X1. (v1\_xxreal\_0 X1) \Rightarrow (\forall X2. (v1\_xxreal\_0 X2) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow (r1\_xxreal\_0 X0 X2)))) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\ & (\forall X1. (((\neg v1\_xboole\_0 X1) \wedge ((v2\_compts\_1 X1 (k15\_euclid \\ & np\_2)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid \\ & np\_2)))))) \Rightarrow ((X0 \in X1) \Rightarrow ((r1\_xxreal\_0 (k6\_pscomp\_1 X1) (k17\_euclid \\ & X0)) \wedge ((r1\_xxreal\_0 (k17\_euclid X0) (k8\_pscomp\_1 X1)) \wedge ((r1\_xxreal\_0 \\ & (k9\_pscomp\_1 X1) (k18\_euclid X0)) \wedge (r1\_xxreal\_0 (k18\_euclid X0) \\ & (k7\_pscomp\_1 X1))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. (v1\_xxreal\_0 X0) \Rightarrow (\forall X1. (v1\_xxreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X0)) \Rightarrow (X0 = X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 ( \\ u1\_struct\_0 (k15\_euclid np\_2)))))) \Rightarrow ((v1\_topreal2 X0) \Rightarrow (\forall X1. \\ (m1\_subset\_1 X1 k1\_numbers) \Rightarrow (\exists X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ (k15\_euclid np\_2)))) \wedge ((X2 \in X0) \wedge (k17\_euclid X2 \neq X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow (m1\_subset\_1 (k8\_pscomp\_1 X0) k1\_numbers) \quad (7)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow (m1\_subset\_1 (k6\_pscomp\_1 X0) k1\_numbers) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow (m1\_subset\_1 (k17\_euclid X0) k1\_numbers) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid \\ np\_2)))) \Rightarrow ((v1\_topreal2 X0) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge (v2\_compts\_1 \\ X0 (k15\_euclid np\_2)))) \end{aligned} \quad (12)$$

### Theorem 1

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_compts\_1 X0 (k15\_euclid np\_2)) \wedge \\ (m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))))) \Rightarrow \\ (\neg (v1\_topreal2 X0) \wedge (r1\_xxreal\_0 (k8\_pscomp\_1 X0) (k6\_pscomp\_1 \\ X0)))) \end{aligned}$$