

# t11\_topreal9 (TMGvLmFYyDwupucs- dUMjh9T vzsoUajCq5NA)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $k2\_topreal9 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_euclid : \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  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  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(v1\_xreal\_0 \\
 & X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow \\
 & (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow ( \\
 & (X2 \in k2\_topreal9 X0 X3 X1) \Leftrightarrow (r1\_xxreal\_0 (k12\_euclid (k5\_algstr\_0 \\
 & (k15\_euclid X0) X2 X3)) X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\
 & X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & X1 (u1\_struct\_0 X0)) \Rightarrow (k5\_algstr\_0 X0 X1 (k4\_struct\_0 X0) = X1))
 \end{aligned} \tag{2}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow & ((v2\_pre\_topc\ (k15\_euclid\ X0)) \wedge \\ & ((v13\_algstr\_0\ (k15\_euclid\ X0)) \wedge ((v2\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v3\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v4\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v5\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v6\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & ((v7\_rlvect\_1\ (k15\_euclid\ X0)) \wedge ((v8\_rlvect\_1\ (k15\_euclid\ X0)) \wedge \\ & (v5\_rltopsp1\ (k15\_euclid\ X0)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((-v2\_struct\_0\ (k15\_euclid\ X0)) \wedge (v5\_rltopsp1\ (k15\_euclid\ X0))) \quad (5)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0\ X0) \Rightarrow ((l2\_struct\_0\ X0) \wedge (l1\_algstr\_0\ X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_rlvect\_1\ X0) \Rightarrow (l2\_algstr\_0\ X0) \quad (7)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1\ X0) \Rightarrow ((l1\_rlvect\_1\ X0) \wedge (l1\_pre\_topc\ X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l2\_struct\_0\ X0) \Rightarrow (m1\_subset\_1\ (k4\_struct\_0\ X0)\ (u1\_struct\_0\ X0)) \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v5\_rltopsp1\ (k15\_euclid\ X0)) \wedge (l1\_rltopsp1\ (k15\_euclid\ X0))) \quad (10)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1) \Rightarrow (v7\_ordinal1\ X0) \quad (11)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1\ X0\ k5\_numbers) \Rightarrow & (\forall X1.(v1\_xreal\_0 \\ & X1) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ (k15\_euclid\ X0))) \Rightarrow \\ & ((X2 \in k2\_topreal9\ X0\ (k4\_struct\_0\ (k15\_euclid\ X0))\ X1) \Rightarrow (r1\_xxreal\_0 \\ & (k12\_euclid\ X2)\ X1)))) \end{aligned}$$