

t12\_topreal1 (TM-  
GRr9S3j46gQX27qDAcGwxKxsHqG8A1RVw)

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Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rltopsp1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $r1\_topreal1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  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  $v5\_rlvect\_1 : \iota \Rightarrow o$  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  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ (k15\_euclid X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 ( \\ k15\_euclid X0))) \Rightarrow ((X1 \neq X2) \Rightarrow (r1\_topreal1 (k15\_euclid X0) X1 X2 \\ (k1\_rltopsp1 (k15\_euclid X0) X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ (u1\_struct\_0 (k15\_euclid X0)))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 ( \\ u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\ (k15\_euclid X0))) \Rightarrow (((r1\_topreal1 (k15\_euclid X0) X3 X2 X1) \wedge (k9\_subset\_1 \\ (u1\_struct\_0 (k15\_euclid X0)) (k1\_rltopsp1 (k15\_euclid X0) X4 \\ X3) X1 = k1\_tarski X3) \Rightarrow (r1\_topreal1 (k15\_euclid X0) X4 X2 (k4\_subset\_1 \\ (u1\_struct\_0 (k15\_euclid X0)) (k1\_rltopsp1 (k15\_euclid X0) X4 \\ X3) X1)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1 \\
& \quad (u1\_struct\_0\ (k15\_euclid\ X0)))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2 \\
& \quad (u1\_struct\_0\ (k15\_euclid\ X0))) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ ( \\
& \quad u1\_struct\_0\ (k15\_euclid\ X0))) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0 \\
& \quad (k15\_euclid\ X0))) \Rightarrow (((r1\_topreal1\ (k15\_euclid\ X0)\ X2\ X3\ X1) \wedge (k9\_subset\_1 \\
& \quad (u1\_struct\_0\ (k15\_euclid\ X0))\ X1\ (k1\_rltopsp1\ (k15\_euclid\ X0) \\
& \quad X3\ X4) = k1\_tarski\ X3) \Rightarrow (r1\_topreal1\ (k15\_euclid\ X0)\ X2\ X4\ (k4\_subset\_1 \\
& \quad (u1\_struct\_0\ (k15\_euclid\ X0))\ X1\ (k1\_rltopsp1\ (k15\_euclid\ X0) \\
& \quad X3\ X4)))))))))
\end{aligned} \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((\neg v2\_struct\_0\ (k15\_euclid\ X0)) \wedge (v5\_rltopsp1\ (k15\_euclid\ X0))) \tag{5}$$

Assume the following.

$$\forall X0.(l1\_rltopsp1\ X0) \Rightarrow ((l1\_rlvect\_1\ X0) \wedge (l1\_pre\_topc\ X0)) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0\ X0) \wedge ((v13\_algstr\_0 \\
& \quad X0) \wedge ((v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge \\
& ((v5\_rlvect\_1\ X0) \wedge ((v6\_rlvect\_1\ X0) \wedge ((v7\_rlvect\_1\ X0) \wedge ((v8\_rlvect\_1 \\
& \quad X0) \wedge (l1\_rlvect\_1\ X0)))))))))) \wedge ((m1\_subset\_1\ X1\ (u1\_struct\_0 \\
& \quad X0)) \wedge (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))) \Rightarrow (m1\_subset\_1\ (k1\_rltopsp1 \\
& \quad X0\ X1\ X2)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X0)))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((v5\_rltopsp1\ (k15\_euclid\ X0)) \wedge (l1\_rltopsp1\ (k15\_euclid\ X0))) \tag{8}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ & \quad (k15\_euclid\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ ( \\ & \quad k15\_euclid\ X0))) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ (k15\_euclid \\ & \quad X0))) \Rightarrow ((k9\_subset\_1\ (u1\_struct\_0\ (k15\_euclid\ X0))\ (k1\_rltopsp1 \\ & \quad (k15\_euclid\ X0)\ X1\ X2)\ (k1\_rltopsp1\ (k15\_euclid\ X0)\ X2\ X3) = k1\_tarski \\ X2) \Rightarrow (((X1 = X2) \wedge (X2 = X3)) \vee (r1\_topreal1\ (k15\_euclid\ X0)\ X1\ X3\ (k4\_subset\_1 \\ & \quad (u1\_struct\_0\ (k15\_euclid\ X0))\ (k1\_rltopsp1\ (k15\_euclid\ X0)\ X1 \\ & \quad X2)\ (k1\_rltopsp1\ (k15\_euclid\ X0)\ X2\ X3)))))) \end{aligned}$$