

t77\_borsuk\_5

(TMXA w8BB wsgvG2ExP9D1FTjMnRztf9Fp3zo)

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Let  $v2\_connsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_topmetr : \iota$  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  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v2\_connsp\_1 X0 k3\_topmetr) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 \\ (u1\_struct\_0 k3\_topmetr)))) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ (v1\_xreal\_0 X2) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow (((r1\_xxreal\_0 \\ X1 X2) \wedge (r1\_xxreal\_0 X2 X3) \wedge ((X1 \in X0) \wedge (X3 \in X0)))) \Rightarrow (X2 \in X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (v1\_xreal\_0 X1) \Rightarrow (k1\_rcomp\_1 \\ X0 X1 = ReplSep (toset (\lambda X2 : \iota. m1\_subset\_1 X2 k1\_numbers)) \\ (\lambda X2 : \iota. (r1\_xxreal\_0 X0 X2) \wedge (r1\_xxreal\_0 X2 X1)) (\lambda X2 : \\ \iota. X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (4)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v2\_connsp\_1 X0 k3\_topmetr) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 \\ (u1\_struct\_0 k3\_topmetr)))) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ (v1\_xreal\_0 X2) \Rightarrow (((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow (r1\_tarski (k1\_rcomp\_1 \\ X1 X2) X0)))) \end{aligned}$$