

l8_convex3 (TML- cab31z5UAvoaP6TgYYuTAAgkXHWNyChV)

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Let $v2_struct.0 : \iota \Rightarrow o$ 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 $v5_rlvect.1 : \iota \Rightarrow o$ 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 $l1_rlvect.1 : \iota \Rightarrow o$ be given. Let $v1_xboole.0 : \iota \Rightarrow o$ 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 $v1_convex1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_convex1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_rlvect.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_rlvect.2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_convex3 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct.0 X0) \wedge ((v13_algstr.0 X0) \wedge ((v2_rlvect.1 \\ & X0) \wedge ((v3_rlvect.1 X0) \wedge ((v4_rlvect.1 X0) \wedge ((v5_rlvect.1 X0) \wedge \\ & ((v6_rlvect.1 X0) \wedge ((v7_rlvect.1 X0) \wedge ((v8_rlvect.1 X0) \wedge (l1_rlvect.1 \\ & X0)))))))))) \Rightarrow (\forall X1.((v1_convex1 X1 X0) \wedge (m1_subset.1 X1 \\ & (k1_zfmisc.1 (u1_struct.0 X0)))) \Rightarrow (\forall X2.(m1_subset.1 X2 \\ & (k1_zfmisc.1 (u1_struct.0 X0))) \Rightarrow (\forall X3.(m2_rlvect.2 X3 \\ & X0 X2) \Rightarrow (((v2_convex1 X3 X0) \wedge (r1_tarski X2 X1)) \Rightarrow (k6_rlvect.2 X0 \\ & X3 \in X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct.0 X0) \wedge ((v13_algstr.0 X0) \wedge ((v2_rlvect.1 \\ & X0) \wedge ((v3_rlvect.1 X0) \wedge ((v4_rlvect.1 X0) \wedge ((v5_rlvect.1 X0) \wedge \\ & ((v6_rlvect.1 X0) \wedge ((v7_rlvect.1 X0) \wedge ((v8_rlvect.1 X0) \wedge (l1_rlvect.1 \\ & X0)))))))))) \Rightarrow (\forall X1.((\neg v1_xboole.0 X1) \wedge (m1_subset.1 X1 \\ & (k1_zfmisc.1 (u1_struct.0 X0)))) \Rightarrow ((v1_convex1 X1 X0) \Rightarrow (r1_tarski \\ & (ReplSep (toset (\lambda X2 : \iota. (v2_convex1 X2 X0) \wedge (m2_rlvect.2 \\ & X2 X0 X1))) (\lambda X2 : \iota. X2 \in k1_convex3 X0) (\lambda X2 : \iota. k6_rlvect.2 \\ & X0 X2)) X1))) \end{aligned}$$