

t9_convex2

(TMMpYC29XPZfBZhxJKfQr1xiH53tRU1nX4d)

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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 $v2_convex1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_rlvect_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $k7_rlvect_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_rlvect_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_rlvect_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\
 & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\
 & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
 & X0)))))))))) \Rightarrow (\forall X1. ((v2_convex1 X1 X0) \wedge (m1_rlvect_2 X1 \\
 & X0)) \Rightarrow (\forall X2. ((v2_convex1 X2 X0) \wedge (m1_rlvect_2 X2 X0)) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 k1_numbers) \Rightarrow (\neg(\neg r1_xxreal_0 X3 k6_numbers) \wedge \\
 & ((\neg r1_xxreal_0 np_1 X3) \wedge (\neg(v2_convex1 (k7_rlvect_2 X0 (k8_rlvect_2 \\
 & X0 X3 X1) (k8_rlvect_2 X0 (k9_real_1 np_1 X3) X2)) X0) \wedge (m1_rlvect_2 \\
 & (k7_rlvect_2 X0 (k8_rlvect_2 X0 X3 X1) (k8_rlvect_2 X0 (k9_real_1 \\
 & np_1 X3) X2)) X0)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (\forall X3. \\ & (m1_rlvect_2 X3 X0) \Rightarrow ((m2_rlvect_2 X3 X0 X2) \Rightarrow (m2_rlvect_2 (k8_rlvect_2 \\ & X0 X1 X3) X0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v13_algstr_0 X0) \wedge ((v2_rlvect_1 \\ & X0) \wedge ((v3_rlvect_1 X0) \wedge ((v4_rlvect_1 X0) \wedge ((v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0))) \Rightarrow (\forall X2.(m1_rlvect_2 X2 X0) \Rightarrow (\forall X3.(m1_rlvect_2 \\ & X3 X0) \Rightarrow (((m2_rlvect_2 X2 X0 X1) \wedge (m2_rlvect_2 X3 X0 X1)) \Rightarrow (m2_rlvect_2 \\ & (k7_rlvect_2 X0 X2 X3) X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$v3_membered k1_numbers \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l2_algstr_0 X0)) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2. \\ & (m2_rlvect_2 X2 X0 X1) \Rightarrow (m1_rlvect_2 X2 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. (l1_rlvect_1 X0) \Rightarrow (l2_algstr_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 \\ & X1)) \Rightarrow (m1_subset_1 (k9_real_1 X0 X1) k1_numbers) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v3_membered X0) \Rightarrow (\forall X1. (m1_subset_1 X1 X0) \Rightarrow \\ & (v1_xreal_0 X1)) \end{aligned} \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 \\ & (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2.((v2_convex1 X2 \\ & X0) \wedge (m2_rlvect_2 X2 X0 X1)) \Rightarrow (\forall X3.((v2_convex1 X3 X0) \wedge (\\ & m2_rlvect_2 X3 X0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow \\ & (\neg(\neg r1_xxreal_0 X4 k6_numbers) \wedge (\neg r1_xxreal_0 np_1 X4) \wedge (\neg(\\ & v2_convex1 (k7_rlvect_2 X0 (k8_rlvect_2 X0 X4 X2) (k8_rlvect_2 \\ & X0 (k9_real_1 np_1 X4) X3)) X0) \wedge (m2_rlvect_2 (k7_rlvect_2 X0 (\\ & k8_rlvect_2 X0 X4 X2) (k8_rlvect_2 X0 (k9_real_1 np_1 X4) X3)) X0 \\ & X1))))))))) \end{aligned}$$