

t16_circled1

(TMHdxB1SjqifuC9nvDbnSWV92vuVUerEbqV)

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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 $m1_rlvect_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_circled1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_rlvect_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v2_convex1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_funct_1 : \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k18_rvsum_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))) \Rightarrow (\forall X1. (m1_rlvect_2 X1 X0) \Rightarrow (\neg (v2_convex1 \\ & X1 X0) \wedge (k3_rlvect_2 X0 X1 = k1_xboole_0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\ & X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\ & ((v6_rlvect_1 X0) \wedge ((v7_rlvect_1 X0) \wedge ((v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\ & X0)))))) \Rightarrow (\forall X1. (m1_rlvect_2 X1 X0) \Rightarrow ((v1_circled1 \\ & X1 X0) \Leftrightarrow (\exists X2. (m2_finseq_1 X2 (u1_struct_0 X0)) \wedge (v2_funct_1 \\ & X2) \wedge (k10_xtuple_0 X2 = k3_rlvect_2 X0 X1) \wedge (\exists X3. (m2_finseq_1 \\ & X3 k1_numbers) \wedge (k3_finseq_1 X3 = k3_finseq_1 X2) \wedge ((k18_rvsum_1 \\ & X3 = np_1) \wedge (\forall X4. (v7_ordinal1 X4) \Rightarrow ((X4 \in k4_finseq_1 X3) \Rightarrow \\ & ((k1_funct_1 X3 X4 = k1_funct_1 X1 (k1_funct_1 X2 X4)) \wedge (r1_xxreal_0 \\ & k6_numbers (k1_funct_1 X3 X4)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\
& X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
& X0)))))) \Rightarrow (\forall X1.(m1_rlvect_2 X1 X0) \Rightarrow ((v2_convex1 X1 \\
& X0) \Leftrightarrow (\exists X2.(m2_finseq_1 X2 (u1_struct_0 X0)) \wedge (v2_funct_1 \\
& X2) \wedge ((k10_xtuple_0 X2 = k3_rlvect_2 X0 X1) \wedge (\exists X3.(m2_finseq_1 \\
& X3 k1_numbers) \wedge (k3_finseq_1 X3 = k3_finseq_1 X2) \wedge ((k18_rvsum_1 \\
& X3 = np_1) \wedge (\forall X4.(v7_ordinal1 X4) \Rightarrow ((X4 \in k4_finseq_1 X3) \Rightarrow \\
& ((k1_funct_1 X3 X4 = k1_funct_1 X1 (k1_funct_1 X2 X4)) \wedge (r1_xxreal_0 \\
& k6_numbers (k1_funct_1 X3 X4))))))))))
\end{aligned} \tag{3}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (v13_algstr_0 X0) \wedge (v2_rlvect_1 \\
& X0) \wedge (v3_rlvect_1 X0) \wedge (v4_rlvect_1 X0) \wedge (v5_rlvect_1 X0) \wedge \\
& ((v6_rlvect_1 X0) \wedge (v7_rlvect_1 X0) \wedge (v8_rlvect_1 X0) \wedge (l1_rlvect_1 \\
& X0)))))) \Rightarrow (\forall X1.(m1_rlvect_2 X1 X0) \Rightarrow (\neg (v1_circled1 \\
& X1 X0) \wedge (k3_rlvect_2 X0 X1 = k1_xboole_0)))
\end{aligned}$$