

t22_rearran1 (TMSRzXm- GryDo5638vEcKuT4vjXLGH1XugC4)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v1_rearran1 : \iota \Rightarrow o$ be given. Let $v2_rearran1 : \iota \Rightarrow o$ be given. Let $v3_rearran1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_card_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_rearran1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_rearran1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k3_rearran1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k14_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_rfunct_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rfinseq : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v1_xboole_0 X1) \wedge (v1_finset_1 X1)) \Rightarrow (\forall X2.(m1_subset_1 \\
& X2 X0) \Rightarrow (\forall X3.((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\
& (k2_zfmisc_1 X1 k1_numbers)))) \Rightarrow (\forall X4.((v1_rearran1 X4) \wedge \\
& ((v2_rearran1 X4) \wedge ((v3_rearran1 X4 (k1_zfmisc_1 X0)) \wedge (m2_finseq_1 \\
& X4 (k1_zfmisc_1 X0)))))) \Rightarrow (((v1_partfun1 X3 X1) \wedge (k5_card_1 X0 = \\
& k5_card_1 X1)) \Rightarrow (((X2 \in k1_funct_1 X4 np_1) \Rightarrow (k1_seq_1 (k3_rearran1 \\
& X1 X0 X4 X3) X2 = k1_seq_1 (k20_rfunct_3 X1 X3 X1) np_1)) \wedge (\forall X5. \\
& (m1_subset_1 X5 k5_numbers) \Rightarrow (((r1_xxreal_0 np_1 X5) \wedge (X2 \in k6_subset_1 \\
& (k1_funct_1 X4 (k2_nat_1 X5 np_1)) (k1_funct_1 X4 X5))) \Rightarrow ((r1_xxreal_0 \\
& (k3_finseq_1 X4) X5) \vee (k1_seq_1 (k3_rearran1 X1 X0 X4 X3) X2 = k1_seq_1 \\
& (k20_rfunct_3 X1 X3 X1) (k2_nat_1 X5 np_1))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \wedge \\ & ((v1_rearran1 X1) \wedge ((v2_rearran1 X1) \wedge ((v3_rearran1 X1 (k1_zfmisc_1 \\ & X0)) \wedge (m1_finseq_1 X1 (k1_zfmisc_1 X0)))))) \Rightarrow ((v1_rearran1 (k2_rearran1 \\ & X0 X1)) \wedge ((v2_rearran1 (k2_rearran1 X0 X1)) \wedge ((v3_rearran1 (k2_rearran1 \\ & X0 X1) (k1_zfmisc_1 X0)) \wedge (m2_finseq_1 (k2_rearran1 X0 X1) (k1_zfmisc_1 \\ & X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_finset_1 X1)) \Rightarrow (\forall X2. ((v1_rearran1 \\ & X2) \wedge ((v2_rearran1 X2) \wedge ((v3_rearran1 X2 (k1_zfmisc_1 X1)) \wedge (m2_finseq_1 \\ & X2 (k1_zfmisc_1 X1)))))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow (k4_rearran1 \\ & X0 X1 X2 X3 = k14_rfunct_3 X1 (k16_rfunct_3 X1 (k15_rfunct_3 X1 (k2_rearran1 \\ & X1 X2)) (k3_rfinseq (k20_rfunct_3 X0 X3 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_finset_1 X1)) \Rightarrow (\forall X2. ((v1_rearran1 \\ & X2) \wedge ((v2_rearran1 X2) \wedge ((v3_rearran1 X2 (k1_zfmisc_1 X1)) \wedge (m2_finseq_1 \\ & X2 (k1_zfmisc_1 X1)))))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge (m1_subset_1 \\ & X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \Rightarrow (k3_rearran1 \\ & X0 X1 X2 X3 = k14_rfunct_3 X1 (k16_rfunct_3 X1 (k15_rfunct_3 X1 X2) \\ & (k3_rfinseq (k20_rfunct_3 X0 X3 X0)))))) \end{aligned} \quad (5)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v1_xboole_0 X0) \wedge (v1_finset_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v1_xboole_0 X1) \wedge (v1_finset_1 X1)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 X0) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge (m1_subset_1 X3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X1 k1_numbers)))) \Rightarrow (\forall X4. ((v1_rearran1 X4) \wedge \\ & ((v2_rearran1 X4) \wedge ((v3_rearran1 X4 (k1_zfmisc_1 X0)) \wedge (m2_finseq_1 \\ & X4 (k1_zfmisc_1 X0)))))) \Rightarrow (((v1_partfun1 X3 X1) \wedge (k5_card_1 X0 = \\ & k5_card_1 X1)) \Rightarrow (((X2 \in k1_funct_1 (k2_rearran1 X0 X4) np_1) \Rightarrow (\\ & k1_seq_1 (k4_rearran1 X1 X0 X4 X3) X2 = k1_seq_1 (k20_rfunct_3 X1 \\ & X3 X1) np_1)) \wedge (\forall X5. (m1_subset_1 X5 k5_numbers) \Rightarrow (((r1_xxreal_0 \\ & np_1 X5) \wedge (X2 \in k6_subset_1 (k1_funct_1 (k2_rearran1 X0 X4) (k2_nat_1 \\ & X5 np_1)) (k1_funct_1 (k2_rearran1 X0 X4) X5))) \Rightarrow ((r1_xxreal_0 \\ & (k3_finseq_1 (k2_rearran1 X0 X4) X5) \vee (k1_seq_1 (k4_rearran1 \\ & X1 X0 X4 X3) X2 = k1_seq_1 (k20_rfunct_3 X1 X3 X1) (k2_nat_1 X5 np_1)))))))))) \end{aligned}$$