t19_rearran1 (TMNCtH-PjGEQ9H8Q4YoRFgEx2kARjtasHLxZ)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k21\_rfunct\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_rearran1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20\_rfunct\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k18\_rvsum\_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v1\_finset\_1\ X0)) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (v1\_finset\_1\ X1)) \Rightarrow (\forall X2.((v1\_funct\_1\ X2) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers)))) \Rightarrow (\forall X3.((v1\_rearran1\ X3) \wedge ((v2\_rearran1\ X3) \wedge ((v3\_rearran1\ X3\ (k1\_zfmisc\_1\ X1)) \wedge (m2\_finseq\_1\ X3\ (k1\_zfmisc\_1\ X1))))) \Rightarrow ((v1\_partfun1\ X2\ X0) \wedge (k5\_card\_1\ X1 = k5\_card\_1\ X0)) \Rightarrow (k20\_rfunct\_3\ X1\ (k3\_rearran1\ X0\ X1\ X3\ X2)\ X1 = k20\_rfunct\_3\ X0\ X2\ X0)))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1\_xboole\_0\ X0) \wedge (v1\_finset\_1\ X0)) \wedge (((\neg v1\_xboole\_0\ X1) \wedge (v1\_finset\_1\ X1)) \wedge (((v1\_rearran1\ X2) \wedge ((v2\_rearran1\ X2) \wedge ((v3\_rearran1\ X2\ (k1\_zfmisc\_1\ X1)) \wedge (m1\_finseq\_1\ X2\ (k1\_zfmisc\_1\ X1))))) \wedge ((v1\_funct\_1\ X3) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))))) \Rightarrow ((v1\_funct\_1\ (k3\_rearran1\ X0\ X1\ X2\ X3)) \wedge (m1\_subset\_1\ (k3\_rearran1\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ k1\_numbers)))) \tag{3}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_funct\_1\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(\forall X2.k21\_rfunct\_3\ X0\ X1\ X2 = k18\_rvsum\_1\ (k20\_rfunct\_3\ X0\ X1\ X2))) \tag{4}$$

Theorem 1

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v1\_finset\_1\ X0))\Rightarrow(\forall X1.((\neg v1\_xboole\_0\ X1)\wedge(v1\_finset\_1\ X1))\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(\forall X3.((v1\_rearran1\ X3)\wedge((v2\_rearran1\ X3)\wedge((v3\_rearran1\ X3\ (k1\_zfmisc\_1\ X1))\wedge(m2\_finseq\_1\ X3\ (k1\_zfmisc\_1\ X1)))))\Rightarrow((v1\_partfun1\ X2\ X0)\wedge(k5\_card\_1\ X1 = k5\_card\_1\ X0))\Rightarrow(k21\_rfunct\_3\ X1\ (k3\_rearran1\ X0\ X1\ X3\ X2)\ X1 = k21\_rfunct\_3\ X0\ X2\ X0)))))$$