t81_exchsort (TMUfC99SdmTd3FqrRpa2FHvfHQAeKZ3HKBq)

October 27, 2020

Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $v1\_exchsort : \iota \Rightarrow o$ be given. Let $v2\_exchsort : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k4\_exchsort : \iota \Rightarrow \iota$ be given. Let $k1\_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $v5\_ordinal1 : \iota \Rightarrow o$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $k10\_ordinal2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $k1\_ordinal1 : \iota \Rightarrow \iota$ be given. Let $k3\_tarski : \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k3\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_card\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge ((v5\_ordinal1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_finset\_1\ X1)))) \Rightarrow (k1\_funct\_1\ (k1\_ordinal4\ X1\ (k5\_afinsq\_1\ X0))\ (k1\_afinsq\_1\ X1) = X0) \tag{1}$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0) \Rightarrow (k10\_ordinal2\ X0\ np\_\_1 = k1\_ordinal1\ X0) \tag{2}$$

Assume the following.

$$\forall X0.(v3\_ordinal1\ X0) \Rightarrow (k3\_tarski\ (k1\_ordinal1\ X0) = X0) \tag{3}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{4}$$

Assume the following.

$$\forall X0.k5\_afinsq\_1\ X0 = k3\_afinsq\_1\ X0 \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v5\_ordinal1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finset\_1\ X0)))) \Rightarrow (k1\_afinsq\_1\ X0 = k1\_card\_1\ X0) \tag{6}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v5\_ordinal1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finset\_1\ X0))))\Rightarrow(k1\_card\_1\ X0 = k9\_xtuple\_0\ X0) \tag{7}$$

Assume the following.

$$\forall X0.(v5\_ordinal1\ (k3\_afinsq\_1\ X0))\wedge(v1\_finset\_1\ (k3\_afinsq\_1\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v5\_ordinal1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finset\_1\ X0))))\Rightarrow(v7\_ordinal1\ (k9\_xtuple\_0\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ (k5\_afinsq\_1\ X0))\wedge(v1\_funct\_1\ (k5\_afinsq\_1\ X0)) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v5\_ordinal1\ X0)\wedge(v1\_funct\_1\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v5\_ordinal1\ X1)\wedge(v1\_funct\_1\ X1))))\Rightarrow((v1\_relat\_1\ (k1\_ordinal4\ X0\ X1))\wedge((v5\_ordinal1\ (k1\_ordinal4\ X0\ X1))\wedge(v1\_funct\_1\ (k1\_ordinal4\ X0\ X1)))) \tag{11}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_exchsort\ X0)))\Rightarrow(k4\_exchsort\ X0 = k1\_funct\_1\ X0\ (k3\_tarski\ (k9\_xtuple\_0\ X0))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v1\_funct\_1\ X1))\Rightarrow((X1 = k5\_afinsq\_1\ X0)\Leftrightarrow((k9\_xtuple\_0\ X1 = np\_\_1)\wedge(k1\_funct\_1\ X1\ k6\_numbers = X0))) \tag{13}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v5\_ordinal1\ X0)\wedge(v1\_funct\_1\ X0)))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v5\_ordinal1\ X1)\wedge(v1\_funct\_1\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v5\_ordinal1\ X2)\wedge(v1\_funct\_1\ X2)))\Rightarrow((X2 = k1\_ordinal4\ X0\ X1)\Leftrightarrow((k9\_xtuple\_0\ X2 = k10\_ordinal2\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1))\wedge((\forall X3.(v3\_ordinal1\ X3)\Rightarrow((X3 \in k9\_xtuple\_0\ X0)\Rightarrow(k1\_funct\_1\ X2\ X3 = k1\_funct\_1\ X0\ X3)))\wedge(\forall X3.(v3\_ordinal1\ X3)\Rightarrow((X3 \in k9\_xtuple\_0\ X1)\Rightarrow(k1\_funct\_1\ X2\ (k10\_ordinal2\ (k9\_xtuple\_0\ X0)\ X3) = k1\_funct\_1\ X1\ X3)))))))) \tag{14}$$

Assume the following.

$$\forall X0.k1\_ordinal1\ X0 = k2\_xboole\_0\ X0\ (k1\_tarski\ X0) \tag{15}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v1\_exchsort\ X0)\wedge(v2\_exchsort\ X0\ k1\_xboole\_0))))\Rightarrow((v5\_ordinal1\ X0)\wedge((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_exchsort\ X0)))) \tag{16}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((v3\_ordinal1\ X0)\wedge(v7\_ordinal1\ X0)) \tag{17}$$

Assume the following.

$$\forall X0.((v5\_ordinal1\ X0)\wedge((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0)))\Rightarrow((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_exchsort\ X0))) \tag{18}$$

Theorem 1

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v1\_finset\_1\ X1)\wedge((v1\_exchsort\ X1)\wedge(v2\_exchsort\ X1\ k1\_xboole\_0)))))\Rightarrow(k4\_exchsort\ (k1\_ordinal4\ X1\ (k5\_afinsq\_1\ X0)) = X0)$$