t54_afinsq_1 (TMPkiGvD2ZqWoJn89zYeythEfduPGRr7VX2)

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Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v5\_ordinal1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_card\_1 : \iota \Rightarrow \iota$ be given. Let $v3\_ordinal1 : \iota \Rightarrow o$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1\ X1) \Rightarrow (k9\_xtuple\_0\ (k5\_relat\_1\ X1\ X0) = k3\_xboole\_0\ (k9\_xtuple\_0\ X1)\ X0) \tag{1}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow ((r1\_xxreal\_0\ X0\ X1) \Rightarrow (X0 = k3\_xboole\_0\ X0\ X1))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v5\_ordinal1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finset\_1\ X0)))) \Rightarrow (k1\_afinsq\_1\ X0 = k1\_card\_1\ X0) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v5\_ordinal1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_finset\_1\ X0)))) \Rightarrow (k1\_card\_1\ X0 = k9\_xtuple\_0\ X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X0) \wedge (v1\_funct\_1\ X0)) \Rightarrow ((v1\_relat\_1\ (k5\_relat\_1\ X0\ X1)) \wedge (v1\_funct\_1\ (k5\_relat\_1\ X0\ X1))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v5\_ordinal1\ X0))) \wedge (v3\_ordinal1\ X1)) \Rightarrow ((v1\_relat\_1\ (k5\_relat\_1\ X0\ X1)) \wedge ((v5\_relat\_1\ (k5\_relat\_1\ X0\ X1)\ (k10\_xtuple\_0\ X0)) \wedge (v5\_ordinal1\ (k5\_relat\_1\ X0\ X1)))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v5\_ordinal1\ X0)\wedge(\\(v1\_funct\_1\ X0)\wedge(v1\_finset\_1\ X0))))\wedge(v7\_ordinal1\ X1))\Rightarrow((v1\_relat\_1\\(k5\_relat\_1\ X0\ X1))\wedge(v1\_finset\_1\ (k5\_relat\_1\ X0\ X1))) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v5\_ordinal1\ X0)\wedge((v1\_funct\_1\\X0)\wedge(v1\_finset\_1\ X0))))\Rightarrow(v7\_ordinal1\ (k9\_xtuple\_0\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \tag{9}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v3\_ordinal1\ X0) \tag{10}$$

Theorem 1

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((\\v5\_ordinal1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_finset\_1\ X1))))\Rightarrow((r1\_xxreal\_0\\X0\ (k1\_afinsq\_1\ X1))\Rightarrow(k1\_afinsq\_1\ (k5\_relat\_1\ X1\ X0) = X0)))$$