t9_topalg_1 (TMS7onLZXgddXmaEzrJAtDwaybzRgaFG8Dt)

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Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_finseq\_1 : \iota \Rightarrow o$ be given. Let $v3\_valued\_0 : \iota \Rightarrow o$ be given. Let $k8\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_valued\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge ((v3\_valued\_0\ X0) \wedge (v1\_finseq\_1\ X0)))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge ((v3\_valued\_0\ X1) \wedge (v1\_finseq\_1\ X1)))) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v1\_funct\_1\ X2) \wedge ((v3\_valued\_0\ X2) \wedge (v1\_finseq\_1\ X2)))) \Rightarrow (k4\_rvsum\_1\ X0\ (k8\_rvsum\_1\ X1\ X2) = k8\_rvsum\_1\ (k4\_rvsum\_1\ X0\ X1)\ X2))) \tag{1}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge ((v3\_valued\_0\ X0) \wedge (v1\_finseq\_1\ X0)))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge ((v3\_valued\_0\ X1) \wedge (v1\_finseq\_1\ X1)))) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v1\_funct\_1\ X2) \wedge ((v3\_valued\_0\ X2) \wedge (v1\_finseq\_1\ X2)))) \Rightarrow (k8\_rvsum\_1\ (k8\_rvsum\_1\ X0\ X1)\ X2 = k8\_rvsum\_1\ X0\ (k4\_rvsum\_1\ X1\ X2)))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge ((v3\_valued\_0\ X0) \wedge (v1\_finseq\_1\ X0)))) \wedge ((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge ((v3\_valued\_0\ X1) \wedge (v1\_finseq\_1\ X1))))) \Rightarrow (k8\_rvsum\_1\ X0\ X1 = k45\_valued\_1\ X0\ X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v3\_valued\_0\ X0)\wedge(v1\_finseq\_1\ X0))))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v3\_valued\_0\ X1)\wedge(v1\_finseq\_1\ X1)))))\Rightarrow(k4\_rvsum\_1\ X0\ X1 = k1\_valued\_1\ X0\ X1) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v1\_valued\_0\ X0)\wedge(v1\_finseq\_1\ X0))))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v1\_valued\_0\ X1)\wedge(v1\_finseq\_1\ X1)))))\Rightarrow((v1\_relat\_1\ (k45\_valued\_1\ X0\ X1))\wedge((v1\_funct\_1\ (k45\_valued\_1\ X0\ X1))\wedge(v1\_finseq\_1\ (k45\_valued\_1\ X0\ X1)))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_valued\_0\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v3\_valued\_0\ X1))))\Rightarrow((v1\_relat\_1\ (k45\_valued\_1\ X0\ X1))\wedge((v1\_funct\_1\ (k45\_valued\_1\ X0\ X1))\wedge(v3\_valued\_0\ (k45\_valued\_1\ X0\ X1)))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v3\_valued\_0\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v3\_valued\_0\ X1))))\Rightarrow((v1\_relat\_1\ (k1\_valued\_1\ X0\ X1))\wedge((v1\_funct\_1\ (k1\_valued\_1\ X0\ X1))\wedge(v3\_valued\_0\ (k1\_valued\_1\ X0\ X1)))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v1\_valued\_0\ X0)\wedge(v1\_finseq\_1\ X0))))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v1\_valued\_0\ X1)\wedge(v1\_finseq\_1\ X1)))))\Rightarrow((v1\_relat\_1\ (k1\_valued\_1\ X0\ X1))\wedge((v1\_funct\_1\ (k1\_valued\_1\ X0\ X1))\wedge(v1\_finseq\_1\ (k1\_valued\_1\ X0\ X1)))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v3\_valued\_0\ X0)\wedge(v1\_finseq\_1\ X0))))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v3\_valued\_0\ X1)\wedge(v1\_finseq\_1\ X1)))))\Rightarrow(k4\_rvsum\_1\ X0\ X1 = k4\_rvsum\_1\ X1\ X0) \tag{9}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v3\_valued\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_valued\_0\ X0)) \tag{10}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge((v1\_finseq\_1\ X0)\wedge(v3\_valued\_0\ X0))))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge((v1\_finseq\_1\ X1)\wedge(v3\_valued\_0\ X1))))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge((v1\_funct\_1\ X2)\wedge((v1\_finseq\_1\ X2)\wedge(v3\_valued\_0\ X2))))\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge((v1\_funct\_1\ X3)\wedge((v1\_finseq\_1\ X3)\wedge(v3\_valued\_0\ X3))))\Rightarrow(k8\_rvsum\_1\ (k4\_rvsum\_1\ X0\ X1)\ (k4\_rvsum\_1\ X2\ X3) = k4\_rvsum\_1\ (k8\_rvsum\_1\ X0\ X2)\ (k8\_rvsum\_1\ X1\ X3)))))$$