

t49\_rvsum\_1  
(TMGST3SJ883cBUexjVKuQoz23JH2Ct55zcm)

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k10\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k24\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (\forall X2.(v1\_xcmplx\_0 X2) \Rightarrow ( \\ k24\_valued\_1 X0 (k3\_xcmplx\_0 X1 X2) = k24\_valued\_1 (k24\_valued\_1 \\ X0 X2) X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k11\_binop\_2 X0 X1 = k3\_xcmplx\_0 X0 X1) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v3\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k10\_rvsum\_1 X0 X1 = k24\_valued\_1 X0 X1) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k3\_xcmplx\_0 X0 X1)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow ((v1\_relat\_1 (k24\_valued\_1 X0 X1)) \wedge ((v1\_funct\_1 (k24\_valued\_1 X0 X1)) \wedge (v1\_finseq\_1 (k24\_valued\_1 X0 X1)))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\wedge(v1\_xreal\_0 X1))\Rightarrow((v1\_relat\_1 (k24\_valued\_1 X0 X1))\wedge(v1\_funct\_1 (k24\_valued\_1 X0 X1))\wedge(v3\_valued\_0 (k24\_valued\_1 X0 X1)))) \quad (6)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge(v3\_valued\_0 X0))\Rightarrow((v1\_relat\_1 X0)\wedge(v1\_valued\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xcmplx\_0 X0) \quad (8)$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(\forall X1.(v1\_xreal\_0 X1)\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 X2)\wedge((v3\_valued\_0 X2)\wedge(v1\_finseq\_1 X2))))\Rightarrow(k10\_rsum\_1 X2 (k11\_binop\_2 X0 X1) = k10\_rsum\_1 (k10\_rsum\_1 X2 X1) X0)))$$