

## t59\_rvsum\_1

(TMaSiAX1Hb3ThDEzCbpbq1vW5cB2a7eqNd8K)

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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  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ X1))) \Rightarrow (\forall X2.k1\_funct\_1 (k18\_valued\_1 X0 X1) X2 = k3\_xcmplx\_0 \\ (k1\_funct\_1 X0 X2) (k1\_funct\_1 X1 X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow (k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (( \\ v3\_valued\_0 X0) \wedge (v1\_finseq\_1 X0)))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 \\ X1) \wedge ((v3\_valued\_0 X1) \wedge (v1\_finseq\_1 X1)))))) \Rightarrow (k14\_rvsum\_1 X0 \\ X1 = k18\_valued\_1 X0 X1) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k11\_binop\_2 X0 X1 = k3\_xcmplx\_0 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow (v1\_xreal\_0 (k1\_funct\_1 X0 X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 \\ X0)))\wedge((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v3\_valued\_0 X1))))\Rightarrow \\ ((v1\_relat\_1 (k18\_valued\_1 X0 X1))\wedge((v1\_funct\_1 (k18\_valued\_1 \\ X0 X1))\wedge(v3\_valued\_0 (k18\_valued\_1 X0 X1)))) \end{aligned} \quad (6)$$

Assume the following.

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

**Theorem 1**

$$\begin{aligned} \forall X0.\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge((v3\_valued\_0 \\ X1)\wedge(v1\_finseq\_1 X1))))\Rightarrow(\forall X2.((v1\_relat\_1 X2)\wedge((v1\_funct\_1 \\ X2)\wedge((v3\_valued\_0 X2)\wedge(v1\_finseq\_1 X2))))\Rightarrow(k1\_seq\_1 (k14\_rvsum\_1 \\ X1 X2) X0 = k11\_binop\_2 (k1\_seq\_1 X1 X0) (k1\_seq\_1 X2 X0))) \end{aligned}$$