

## t18\_valued\_2

(TMVJ3Jdovq9zzjWi35si5d3kzvMognA9NTd)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ X1)))) \Rightarrow (k30\_valued\_1 (k1\_valued\_1 X0 X1) = k45\_valued\_1 (k30\_valued\_1 \\ X0) X1)) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ (k30\_valued\_1 (k30\_valued\_1 X0) = X0) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ ((v1\_relat\_1 (k30\_valued\_1 X0)) \wedge ((v1\_funct\_1 (k30\_valued\_1 \\ X0)) \wedge (v1\_valued\_0 (k30\_valued\_1 X0)))) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ X1)))) \Rightarrow (k45\_valued\_1 X0 X1 = k1\_valued\_1 X0 (k30\_valued\_1 X1)) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 \\ X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ X1)))) \Rightarrow (k1\_valued\_1 X0 X1 = k1\_valued\_1 X1 X0) \tag{5}$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\ (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\ X1)))) \Rightarrow (k45\_valued\_1 X0 X1 = k30\_valued\_1 (k45\_valued\_1 X1 X0))$$