

## t2\_tietze

(TMWf6ioHCCBazdzWczZNven8XnLpERyHWDg)

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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  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (r1\_tarski (k5\_relat\_1 X1 X0) X1) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 X1))) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v1\_valued\_0 X2)))) \Rightarrow ((k5\_relat\_1 (k45\_valued\_1 X1 X2) X0 = k45\_valued\_1 (k5\_relat\_1 X1 X0) (k5\_relat\_1 X2 X0)) \wedge ((k5\_relat\_1 (k45\_valued\_1 X1 X2) X0 = k45\_valued\_1 (k5\_relat\_1 X1 X0) X2) \wedge (k5\_relat\_1 (k45\_valued\_1 X1 X2) X0 = k45\_valued\_1 X1 (k5\_relat\_1 X2 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((r1\_tarski X0 X1) \Rightarrow (X0 = k5\_relat\_1 X1 (k9\_xtuple\_0 X0)))) \quad (3)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. (r1\_tarski X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v3\_valued\_0 X1)))) \Rightarrow ((v1\_relat\_1 (k45\_valued\_1 X0 X1)) \wedge ((v1\_funct\_1 (k45\_valued\_1 X0 X1)) \wedge (v3\_valued\_0 (k45\_valued\_1 X0 X1)))) \end{aligned} \quad (5)$$

Assume the following.

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

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow \\ & (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v3\_valued\_0 X1)))) \Rightarrow \\ & (\forall X2.((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 X2) \wedge (v3\_valued\_0 X2)))) \Rightarrow \\ & ((r1\_tarski X0 X1) \Rightarrow (r1\_tarski (k45\_valued\_1 X2 X0) (k45\_valued\_1 X2 X1)))) \end{aligned}$$