

t3\_euclid\_9 (TMKcX-  
uExY9JiBbeRm6WRVtgpwSK4v5BDZJN)

October 27, 2020

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  $k54\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow (k54\_valued\_1 (k30\_valued\_1 X0) = k54\_valued\_1 X0) \quad (1)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow (k45\_valued\_1 X0 X1 = k30\_valued\_1 (k45\_valued\_1 X1 X0)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1.(((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \wedge ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow ((v1\_relat\_1 (k45\_valued\_1 X0 X1)) \wedge ((v1\_funct\_1 (k45\_valued\_1 X0 X1)) \wedge (v1\_valued\_0 (k45\_valued\_1 X0 X1)))) \quad (3)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 X1)))) \Rightarrow (k54\_valued\_1 (k45\_valued\_1 X0 X1) = k54\_valued\_1 (k45\_valued\_1 X1 X0))$$