

t2\_topgen\_5  
(TMY2D2UZG7X99WNWHc2jd4GAU7oEbj8shsJ)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((r1\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1)) \Rightarrow (r1\_partfun1 X0 X1))) \quad (1)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((r1\_partfun1 X0 X1) \Rightarrow (\forall X2. k8\_relat\_1 (k1\_funct\_4 X0 X1) X2 = k2\_xboole\_0 (k8\_relat\_1 X0 X2) (k8\_relat\_1 X1 X2)))) \quad (2)$$

**Theorem 1**

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((r1\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1)) \Rightarrow (\forall X2. k8\_relat\_1 (k1\_funct\_4 X0 X1) X2 = k2\_xboole\_0 (k8\_relat\_1 X0 X2) (k8\_relat\_1 X1 X2))))$$