

t80\_funct\_1 (TMQM-  
dASHA8tBjTqmiuhGBWHNmNdvocBgT73)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k7\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (k7\_relat\_1 X1 (k8\_relat\_1 X1 X0) = k3\_xboole\_0 X0 (k7\_relat\_1 X1 (k9\_xtuple\_0 X1))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_relat\_1 X2) \Rightarrow (k5\_relat\_1 (k5\_relat\_1 X2 X0) X1 = k5\_relat\_1 X2 (k3\_xboole\_0 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1\_relat\_1 X2) \Rightarrow (k8\_relat\_1 (k5\_relat\_1 X2 X0) X1 = k3\_xboole\_0 X0 (k8\_relat\_1 X2 X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (k10\_xtuple\_0 (k5\_relat\_1 X1 X0) = k7\_relat\_1 X1 X0) \quad (4)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (k7\_relat\_1 X0 (k9\_xtuple\_0 X0) = k10\_xtuple\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. k3\_xboole\_0 X0 X0 = X0 \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow ((v1\_relat\_1 (k5\_relat\_1 X0 X1)) \wedge (v1\_funct\_1 (k5\_relat\_1 X0 X1))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0 X0 X1 = k3\_xboole\_0 X1 X0 \quad (8)$$

**Theorem 1**

$$\forall X0.\forall X1.\forall X2.((v1\_relat\_1 X2)\wedge(v1\_funct\_1 X2))\Rightarrow(k7\_relat\_1 X2 (k3\_xboole\_0 X0 (k8\_relat\_1 X2 X1)) = k3\_xboole\_0 (k7\_relat\_1 X2 X0) X1)$$