

# l169\_group\_9 (TMdyThuNbsd- cuYtwFAQUEhA3Y1Drfn9uoTS)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (k6\_relat\_1 X0 X1 = k3\_relat\_1 X1 (k4\_relat\_1 X0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (k5\_relat\_1 X1 X0 = k3\_relat\_1 (k4\_relat\_1 X0) X1) \quad (2)$$

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1. k3\_relat\_1 (k4\_relat\_1 X1) (k4\_relat\_1 X0) = k4\_relat\_1 (k3\_xboole\_0 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0. k3\_relat\_1 (k4\_relat\_1 X0) (k4\_relat\_1 X0) = k4\_relat\_1 X0 \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. v1\_relat\_1 (k3\_relat\_1 X0 X1) \quad (6)$$

## **Theorem 1**

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow (\forall X2. (v1\_relat\_1 X2) \Rightarrow (k3\_relat\_1 X1 (k5\_relat\_1 X2 X0) = k3\_relat\_1 (k6\_relat\_1 X0 X1) X2))$$