

t31_quatern3 (TMGehpCjFCK- dqCdK7fsopGzRqiMrfDmmeTG)

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Let $v1_quaterni : \iota \Rightarrow o$ be given. Let $k17_quaterni : \iota \Rightarrow \iota$ be given. Let $k27_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_quaterni : \iota$ be given. Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (\forall X1.(v1_quaterni X1) \Rightarrow (k17_quaterni (k27_quaterni X0 X1) = k17_quaterni (k27_quaterni X1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (\forall X1.(v1_quaterni X1) \Rightarrow (\forall X2.(v1_quaterni X2) \Rightarrow (k27_quaterni (k27_quaterni X0 X1) X2 = k27_quaterni X0 (k27_quaterni X1 X2)))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.((v1_quaterni X0) \wedge (v1_quaterni X1)) \Rightarrow (m1_subset_1 (k27_quaterni X0 X1) k1_quaterni) \quad (3)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_quaterni) \Rightarrow (v1_quaterni X0) \quad (4)$$

Theorem 1

$$\forall X0.(v1_quaterni X0) \Rightarrow (\forall X1.(v1_quaterni X1) \Rightarrow (\forall X2.(v1_quaterni X2) \Rightarrow (k17_quaterni (k27_quaterni (k27_quaterni X0 X1) X2) = k17_quaterni (k27_quaterni (k27_quaterni X2 X0) X1))))$$