

t21_euclid_5 (TM- NoSagLXC7DFNjccqXGdKJezG2mRdrQiowc)

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Let $m1_subset.1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_euclid.5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_euclid.5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k4_struct.0 : \iota \Rightarrow \iota$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $u1_struct.0 : \iota \Rightarrow \iota$ be given. Let $k1_euclid.5 : \iota \Rightarrow \iota$ be given. Let $k1_rlvect.1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_euclid.5 : \iota \Rightarrow \iota$ be given. Let $k3_euclid.5 : \iota \Rightarrow \iota$ be given. Let $k9_real.1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal.0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_subset.1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset.1 \\ X1 (u1_struct.0 (k15_euclid np_3))) \Rightarrow ((k1_euclid.5 (k1_rlvect.1 \\ (k15_euclid np_3) X1 X0) = k8_real.1 X0 (k1_euclid.5 X1)) \wedge ((k2_euclid.5 \\ (k1_rlvect.1 (k15_euclid np_3) X1 X0) = k8_real.1 X0 (k2_euclid.5 \\ X1)) \wedge (k3_euclid.5 (k1_rlvect.1 (k15_euclid np_3) X1 X0) = k8_real.1 \\ X0 (k3_euclid.5 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset.1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset.1 \\ X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset.1 X2 k1_numbers) \Rightarrow (\forall X3. \\ (m1_subset.1 X3 k1_numbers) \Rightarrow (k1_rlvect.1 (k15_euclid np_3) \\ (k4_euclid.5 X1 X2 X3) X0 = k4_euclid.5 (k8_real.1 X0 X1) (k8_real.1 \\ X0 X2) (k8_real.1 X0 X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset.1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset.1 \\ X1 (u1_struct.0 (k15_euclid np_3))) \Rightarrow (k1_rlvect.1 (k15_euclid \\ np_3) X1 X0 = k4_euclid.5 (k8_real.1 X0 (k1_euclid.5 X1)) (k8_real.1 \\ X0 (k2_euclid.5 X1)) (k8_real.1 X0 (k3_euclid.5 X1)))) \end{aligned} \tag{3}$$

Assume the following.

$$k4_struct.0 (k15_euclid np_3) = k4_euclid.5 k6_numbers k6_numbers k6_numbers \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow ((k1_euclid_5 \\ & (k4_euclid_5 X0 X1 X2) = X0) \wedge ((k2_euclid_5 (k4_euclid_5 X0 X1 X2) = \\ & X1) \wedge (k3_euclid_5 (k4_euclid_5 X0 X1 X2) = X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (k5_euclid_5 \\ & (k4_euclid_5 k6_numbers k6_numbers k6_numbers) (k4_euclid_5 \\ & X0 X1 X2) = k4_struct_0 (k15_euclid np_3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 (k15_euclid np_3))) \Rightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 (k15_euclid np_3))) \Rightarrow ((k5_euclid_5 (k1_rlvect_1 \\ & (k15_euclid np_3) X1 X0) X2 = k1_rlvect_1 (k15_euclid np_3) (k5_euclid_5 \\ & X1 X2) X0) \wedge (k5_euclid_5 (k1_rlvect_1 (k15_euclid np_3) X1 X0) \\ & X2 = k5_euclid_5 X1 (k1_rlvect_1 (k15_euclid np_3) X2 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 k1_numbers) \Rightarrow (\forall X4.(m1_subset_1 X4 k1_numbers) \Rightarrow \\ & (\forall X5.(m1_subset_1 X5 k1_numbers) \Rightarrow (k5_euclid_5 (k4_euclid_5 \\ & X0 X1 X2) (k4_euclid_5 X3 X4 X5) = k4_euclid_5 (k9_real_1 (k8_real_1 \\ & X1 X5) (k8_real_1 X2 X4)) (k9_real_1 (k8_real_1 X2 X3) (k8_real_1 \\ & X0 X5)) (k9_real_1 (k8_real_1 X0 X4) (k8_real_1 X1 X3)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$m1_subset_1 k6_numbers k1_numbers \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 X1)) \Rightarrow (m1_subset_1 (k9_real_1 X0 X1) k1_numbers) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 X1)) \Rightarrow (m1_subset_1 (k8_real_1 X0 X1) k1_numbers) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1_xreal_0 X0)\wedge((v1_xreal_0 X1)\wedge(v1_xreal_0 X2)))\Rightarrow(m1_subset_1 (k4_euclid_5 X0 X1 X2) (u1_struct_0 (k15_euclid_np_3))) \quad (12)$$

Assume the following.

$$\begin{aligned} &\forall X0.(m1_subset_1 X0 (u1_struct_0 (k15_euclid_np_3)))\Rightarrow \\ &(\forall X1.(m1_subset_1 X1 (u1_struct_0 (k15_euclid_np_3)))\Rightarrow \\ &(k5_euclid_5 X0 X1 = k4_euclid_5 (k9_real_1 (k8_real_1 (k2_euclid_5 \\ &X0) (k3_euclid_5 X1)) (k8_real_1 (k3_euclid_5 X0) (k2_euclid_5 \\ &X1))) (k9_real_1 (k8_real_1 (k3_euclid_5 X0) (k1_euclid_5 X1)) \\ &(k8_real_1 (k1_euclid_5 X0) (k3_euclid_5 X1))) (k9_real_1 (k8_real_1 \\ &(k1_euclid_5 X0) (k2_euclid_5 X1)) (k8_real_1 (k2_euclid_5 X0) \\ &(k1_euclid_5 X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(v1_xreal_0 X1))\Rightarrow(k8_real_1 X0 X1 = k8_real_1 X1 X0) \quad (14)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(v1_xreal_0 X0) \quad (15)$$

Theorem 1

$$\begin{aligned} &\forall X0.(m1_subset_1 X0 k1_numbers)\Rightarrow(\forall X1.(m1_subset_1 \\ &X1 k1_numbers)\Rightarrow(k5_euclid_5 (k4_euclid_5 k6_numbers X0 k6_numbers) \\ &(k4_euclid_5 k6_numbers X1 k6_numbers) = k4_struct_0 (k15_euclid \\ &np_3))) \end{aligned}$$