

t12_extreal2

(TMHbFr64cJ2ALeXmjqYwKqk3KBkXYj1bzyL)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_numbers : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_supinf_2 : \iota \Rightarrow \iota$ be given. Let $k3_extreal1 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k2_xxreal_3 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow ((r1_xxreal_0 (k2_supinf_2 (k3_extreal1 X0)) X0) \wedge (r1_xxreal_0 X0 (k3_extreal1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 (k2_xxreal_3 X1)) \Rightarrow (r1_xxreal_0 X1 (k2_xxreal_3 X0)))) \wedge ((r1_xxreal_0 (k2_xxreal_3 X0) X1) \Rightarrow (r1_xxreal_0 (k2_xxreal_3 X1) X0))) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X0)) \Rightarrow (X0 = X1)) \quad (3)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (\forall X1.(m1_subset_1 X1 k7_numbers) \Rightarrow ((\neg r1_xxreal_0 X1 (k3_extreal1 X0)) \Rightarrow ((\neg r1_xxreal_0 X0 (k2_supinf_2 X1)) \wedge (\neg r1_xxreal_0 X1 X0)))) \quad (4)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (k2_supinf_2 X0 = k2_xxreal_3 X0) \quad (5)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (k2_xxreal_3 (k2_xxreal_3 X0) = X0) \quad (6)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (k2_supinf_2 (k2_supinf_2 X0) = X0) \quad (7)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (m1_subset_1 (k3_extreal1 X0) k7_numbers) \quad (8)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (v1_xxreal_0 (k2_xxreal_3 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (((r1_xxreal_0 k6_numbers X0) \Rightarrow (k3_extreal1 X0 = X0)) \wedge ((\neg r1_xxreal_0 k6_numbers X0) \Rightarrow (k3_extreal1 X0 = k2_supinf_2 X0))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow ((r1_xxreal_0 X0 X1) \vee (r1_xxreal_0 X1 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (v1_xxreal_0 X0) \quad (12)$$

Theorem 1

$$\forall X0.(m1_subset_1 X0 k7_numbers) \Rightarrow (\forall X1.(m1_subset_1 X1 k7_numbers) \Rightarrow (((r1_xxreal_0 (k2_supinf_2 X0) X1) \wedge (r1_xxreal_0 X1 X0)) \Leftrightarrow (r1_xxreal_0 (k3_extreal1 X1) X0)))$$