t228_xreal_1 (TMcVhonUhFPzm7zygNvcub1odyCCZx89e4R)

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Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.\ (v1\_xxreal\_0\ X2) \Rightarrow (((r1\_xxreal\_0\ X0\ X1) \wedge (r1\_xxreal\_0\ X1\ X2)) \Rightarrow\ (r1\_xxreal\_0\ X0\ X2)))) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\neg\ (\neg r1\_xxreal\_0\ X1\ X0) \wedge (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (\neg(\neg r1\_xxreal\_0\ X2\ X0) \wedge (\neg r1\_xxreal\_0\ X1\ X2))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0) \wedge (v1\_xxreal\_0\ X1)) \Rightarrow (\ (r1\_xxreal\_0\ X0\ X1) \vee (r1\_xxreal\_0\ X1\ X0)) \tag{3}$$

Theorem 1

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.\ (v1\_xxreal\_0\ X2) \Rightarrow ((\forall X3.(v1\_xxreal\_0\ X3) \Rightarrow (\neg(\neg r1\_xxreal\_0\ X3\ X0) \wedge ((\neg r1\_xxreal\_0\ X1\ X3) \wedge (\neg r1\_xxreal\_0\ X2\ X3)))) \Rightarrow ((r1\_xxreal\_0\ X1\ X0) \vee (r1\_xxreal\_0\ X2\ X0)))))$$