

## t55\_xxreal\_3

(TMYiaeFkCBVauusCGvJzJmqvvt58fd4o4tv)

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Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_0 : \iota$  be given. Let  $k2\_xxreal\_0 : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xxreal\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xxreal\_3 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (r1\_xxreal\_0 k2\_xxreal\_0 X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (\neg(\neg(X0 = k1\_xxreal\_0) \wedge (X1 = k1\_xxreal\_0)) \wedge \\ & ((\neg(X0 = k2\_xxreal\_0) \wedge (X1 = k2\_xxreal\_0)) \wedge ((\neg r1\_xxreal\_0 (k3\_xxreal\_3 \\ & X0 X1) X2) \wedge (\neg(X2 \neq k1\_xxreal\_0) \wedge ((X1 \neq k1\_xxreal\_0) \wedge ((X0 \neq k2\_xxreal\_0) \wedge \\ & (\neg r1\_xxreal\_0 X0 (k1\_xxreal\_3 X2 X1)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow ((v1\_xreal\_0 X0) \Rightarrow ((r1\_xxreal\_0 (k1\_xxreal\_3 \\ & X1 X0) X2) \Leftrightarrow (r1\_xxreal\_0 X1 (k3\_xxreal\_3 X2 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (r1\_xxreal\_0 X0 k1\_xxreal\_0) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (((X0 = k1\_xxreal\_0) \Rightarrow (k2\_xxreal\_3 \\ & X0 = k2\_xxreal\_0)) \wedge (((k2\_xxreal\_3 X0 = k2\_xxreal\_0) \Rightarrow (X0 = k1\_xxreal\_0)) \wedge \\ & (((X0 = k2\_xxreal\_0) \Rightarrow (k2\_xxreal\_3 X0 = k1\_xxreal\_0)) \wedge ((k2\_xxreal\_3 \\ & X0 = k1\_xxreal\_0) \Rightarrow (X0 = k2\_xxreal\_0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X0)) \Rightarrow (X0 = X1)) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\neg (k3\_xxreal\_3 X0 X1 = k1\_xxreal\_0) \wedge ((X0 \neq k1\_xxreal\_0) \wedge (X1 \neq k2\_xxreal\_0)))) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\neg(\neg X0 \in k1\_numbers) \wedge ((X0 \neq k1\_xxreal\_0) \wedge (X0 \neq k2\_xxreal\_0))) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow ((X0 \neq k1\_xxreal\_0) \Rightarrow ((k3\_xxreal\_3 k1\_xxreal\_0 X0 = k1\_xxreal\_0) \wedge (k3\_xxreal\_3 X0 k1\_xxreal\_0 = k2\_xxreal\_0))) \quad (9)$$

Assume the following.

$$v3\_xxreal\_0 k2\_xxreal\_0 \quad (10)$$

Assume the following.

$$v2\_xxreal\_0 k1\_xxreal\_0 \quad (11)$$

Assume the following.

$$v1\_xxreal\_0 k2\_xxreal\_0 \quad (12)$$

Assume the following.

$$v1\_xxreal\_0 k1\_xxreal\_0 \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (v1\_xxreal\_0 (k3\_xxreal\_3 X0 X1)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (v1\_xxreal\_0 (k1\_xxreal\_3 X0 X1)) \quad (15)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (k3\_xxreal\_3 X0 X1 = k1\_xxreal\_3 X0 (k2\_xxreal\_3 X1))) \quad (16)$$

Assume the following.

$$k1\_xxreal\_0 = k1\_numbers \quad (17)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Leftrightarrow (X0 \in k1\_numbers) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (r1\_xxreal\_0 X0 X1) \vee (r1\_xxreal\_0 X1 X0) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (k1\_xxreal\_3 X0 X1 = k1\_xxreal\_3 X1 X0) \quad (20)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge (v2\_xxreal\_0 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \quad (21)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (\neg(\neg(X0 = k1\_xxreal\_0) \wedge (X1 = k2\_xxreal\_0)) \wedge \\ & ((\neg(X0 = k2\_xxreal\_0) \wedge (X1 = k1\_xxreal\_0)) \wedge ((\neg r1\_xxreal\_0 (k1\_xxreal\_3 \\ & X0 X1) X2) \wedge (\neg(X2 \neq k1\_xxreal\_0) \wedge ((X1 \neq k2\_xxreal\_0) \wedge ((X0 \neq k2\_xxreal\_0) \wedge \\ & (\neg r1\_xxreal\_0 X0 (k3\_xxreal\_3 X2 X1)))))))))) \end{aligned}$$