

## t10\_rfunct\_4

(TMZs84rSR9byMyfj3enggbwBDGRdWUZnGaH)

October 27, 2020

Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_rfunct\_4 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1\_subset\_1 X1 (k1\_zfmisc\_1 X2)) \wedge (v1\_xboole\_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.(r1\_rfunct\_4 X0 X1) \Leftrightarrow ( \\
& (r1\_tarski X1 (k9\_xtuple\_0 X0)) \wedge (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow \\
& \quad (\neg(\neg r1\_xxreal\_0 X2 k6\_numbers) \wedge (\neg r1\_xxreal\_0 np\_1 X2) \wedge (\exists X3. \\
& \quad (m1\_subset\_1 X3 k1\_numbers) \wedge (\exists X4.(m1\_subset\_1 X4 k1\_numbers) \wedge \\
& ((X3 \in X1) \wedge ((X4 \in X1) \wedge ((k9\_binop\_2 (k11\_binop\_2 X2 X3) (k11\_binop\_2 \\
& (k10\_binop\_2 np\_1 X2) X4) \in X1) \wedge ((X3 \neq X4) \wedge (r1\_xxreal\_0 (k9\_binop\_2 \\
& (k11\_binop\_2 X2 (k1\_seq\_1 X0 X3)) (k11\_binop\_2 (k10\_binop\_2 np\_1 \\
& X2) (k1\_seq\_1 X0 X4))) (k1\_seq\_1 X0 (k9\_binop\_2 (k11\_binop\_2 X2 \\
& X3) (k11\_binop\_2 (k10\_binop\_2 np\_1 X2) X4))))))))))))) \\
& \tag{6}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.\forall X2.((r1\_rfunct\_4 \\
& \quad X0 X1) \wedge (r1\_tarski X2 X1)) \Rightarrow (r1\_rfunct\_4 X0 X2))
\end{aligned}$$