

## t9\_real\_3

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_numbers : \iota$  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  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow & (((v5\_relat\_1 \\ X0 k4\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_funct\_2 X0 k5\_numbers k1\_numbers) \wedge \\ (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Leftrightarrow & \\ ((k9\_xtuple\_0 X0 = k5\_numbers) \wedge (\forall X1.(X1 \in k5\_numbers) \Rightarrow & \\ (v1\_int\_1 (k1\_funct\_1 X0 X1)))) & \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow & ((r1\_tarski \\ (k10\_xtuple\_0 X1) X0) \Rightarrow ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k9\_xtuple\_0 \\ X1) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k9\_xtuple\_0 \\ X1) X0)))))) & \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1.((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1.((v1\_relat\_1 X0) \wedge ((v5\_relat\_1 X0 k4\_numbers) \wedge (v1\_funct\_1 X0))) \Rightarrow (v1\_int\_1 (k1\_funct\_1 X0 X1)) \tag{4}$$

Assume the following.

$$\neg v1\_xboole\_0 k4\_numbers \tag{5}$$

Assume the following.

$$v1\_xboole\_0 \ k1\_xboole\_0 \tag{6}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow (((X1 \neq k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \ X2 \ X0 \\ X1) \Leftrightarrow (X0 = k1\_relset\_1 \ X0 \ X2))) \wedge ((X1 = k1\_xboole\_0) \Rightarrow ((v1\_funct\_2 \\ X2 \ X0 \ X1) \Leftrightarrow (X2 = k1\_xboole\_0)))) \end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 \ X1) \Rightarrow ((v5\_relat\_1 \ X1 \ X0) \Leftrightarrow (r1\_tarski \\ (k10\_xtuple\_0 \ X1) \ X0)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 \ X0 \ X1))) \Rightarrow ((v4\_relat\_1 \ X2 \ X0) \wedge (v5\_relat\_1 \ X2 \ X1)) \tag{9}$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v1\_relat\_1 \ X0) \wedge (v1\_funct\_1 \ X0)) \Rightarrow (((v1\_funct\_1 \\ X0) \wedge ((v1\_funct\_2 \ X0 \ k5\_numbers \ k4\_numbers) \wedge (m1\_subset\_1 \ X0 \ ( \\ k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ k4\_numbers)))))) \Leftrightarrow ((v5\_relat\_1 \\ X0 \ k4\_numbers) \wedge ((v1\_funct\_1 \ X0) \wedge ((v1\_funct\_2 \ X0 \ k5\_numbers \ k1\_numbers) \wedge \\ (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k5\_numbers \ k1\_numbers)))))) \end{aligned}$$