

## t1\_hfdiff\_1

(TMU3UQhJW3ZuJpJhy5pR71cSL7aL1Ng7P9n)

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Let  $v3\_rcomp\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X1) \Rightarrow (k9\_xtuple\_0 (k5\_relat\_1 X1 X0) = k3\_xboole\_0 (k9\_xtuple\_0 X1) X0) \quad (2)$$

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.

$$\forall X0.\forall X1.(r1\_tarski X0 X1) \Rightarrow (k3\_xboole\_0 X0 X1 = X0) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (k5\_relset\_1 X0 X1 X2 X3 = k5\_relat\_1 X2 X3) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\exists X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\wedge((v1\_xboole\_0 X2)\wedge((v1\_relat\_1 X2)\wedge((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\exists X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\wedge((v1\_relat\_1 X2)\wedge((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)\wedge((v1\_funct\_1 X2)\wedge(v1\_funct\_2 X2 X0 X1)))) \quad (8)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(m1\_subset\_1 (k5\_relset\_1 X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 X0)\Rightarrow(v1\_relat\_1 (k5\_relat\_1 X0 X1)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(((X1\neq k1\_xboole\_0)\Rightarrow((v1\_funct\_2 X2 X0 X1)\Leftrightarrow(X0 = k1\_relset\_1 X0 X2)))\wedge((X1 = k1\_xboole\_0)\Rightarrow((v1\_funct\_2 X2 X0 X1)\Leftrightarrow(X2 = k1\_xboole\_0)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0 X0 X1 = k3\_xboole\_0 X1 X0 \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(\neg v1\_xboole\_0 X1))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(((v1\_funct\_1 X2)\wedge(v1\_funct\_2 X2 X0 X1))\Rightarrow((v1\_funct\_1 X2)\wedge((\neg v1\_xboole\_0 X2)\wedge(v1\_funct\_2 X2 X0 X1)))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (16)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v1\_funct\_1 X0) \quad (17)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v3\_rcomp\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow \\ & (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k1\_numbers k1\_numbers) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))))) \Rightarrow \\ & (k1\_relset\_1 k1\_numbers (k5\_relset\_1 k1\_numbers k1\_numbers X1 \\ & X0) = X0)) \end{aligned}$$