

## t9\_jgraph\_2

(TMR14HvFmaBTjXDNIubfA4hQSUdi4MjFAXs)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_topreal2 : \iota \Rightarrow o$  be given. Let  $r1\_topreal1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_euclid : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_topreal1 : \iota$  be given. Let  $k22\_pscomp\_1 : \iota \Rightarrow \iota$  be given. Let  $v2\_compts\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 ( \\
 & u1\_struct\_0 (k15\_euclid np\_2)))))) \Rightarrow ((v1\_topreal2 X0) \Leftrightarrow (\exists X1. \\
 & (m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2))) \wedge (\exists X2. \\
 & (m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid np\_2))) \wedge (\exists X3. \\
 & ((\neg v1\_xboole\_0 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 \\
 & (k15\_euclid np\_2)))))) \wedge (\exists X4. ((\neg v1\_xboole\_0 X4) \wedge (m1\_subset\_1 \\
 & X4 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))))) \wedge ((X1 \neq X2) \wedge \\
 & ((X1 \in X0) \wedge ((X2 \in X0) \wedge ((r1\_topreal1 (k15\_euclid np\_2) X1 X2 X3) \wedge \\
 & ((r1\_topreal1 (k15\_euclid np\_2) X1 X2 X4) \wedge ((X0 = k4\_subset\_1 ( \\
 & u1\_struct\_0 (k15\_euclid np\_2)) X3 X4) \wedge (k9\_subset\_1 (u1\_struct\_0 \\
 & (k15\_euclid np\_2)) X3 X4 = k2\_tarski X1 X2))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{2}$$

Assume the following.

$$k4\_struct\_0 (k15\_euclid np\_2) = k19\_euclid k6\_numbers k6\_numbers \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1))\Leftrightarrow(r1\_tarski X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.k4\_xboole\_0 X0 k1\_xboole\_0 = X0 \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1)\Rightarrow((v1\_xboole\_0 X1)\vee (X0 \in X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.k6\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1 \quad (7)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (9)$$

Assume the following.

$$\exists X0.(v1\_xboole\_0 X0)\wedge((v1\_xcmplx\_0 X0)\wedge((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.\exists X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\wedge(v1\_xboole\_0 X1) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(k3\_subset\_1 X0 (k3\_subset\_1 X0 X1) = X1) \quad (12)$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0 (k1\_tarski X0) \quad (13)$$

Assume the following.

$$v1\_topreal2 k1\_topreal1 \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.m1\_subset\_1 (k6\_subset\_1 X0 X1) (k1\_zfmisc\_1 X0) \quad (15)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow (m1\_subset\_1 (k22\_pscomp\_1 X0) (u1\_struct\_0 (k15\_euclid np\_2))) \quad (16)$$

Assume the following.

$$m1\_subset\_1 k1\_topreal1 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (m1\_subset\_1 (k19\_euclid X0 X1) (u1\_struct\_0 (k15\_euclid np\_2))) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (k3\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (20)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Leftrightarrow (\forall X1.\neg X1 \in X0) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1\_tarski X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (22)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow ((v1\_topreal2 X0) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge (v2\_compts\_1 X0 (k15\_euclid np\_2)))) \quad (23)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2)))) \Rightarrow ((X0 = k6\_domain\_1 (u1\_struct\_0 (k15\_euclid np\_2)) (k4\_struct\_0 (k15\_euclid np\_2))) \Rightarrow ((k3\_subset\_1 (u1\_struct\_0 (k15\_euclid np\_2)) X0 \neq k1\_xboole\_0) \wedge (k6\_subset\_1 (u1\_struct\_0 (k15\_euclid np\_2)) X0 \neq k1\_xboole\_0)))$$