

## t105\_jgraph\_7

(TMKG4j23EHtdEZTcxy7XpWDAK7Urg7uRCuu)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_euclid : \iota \Rightarrow \iota$  be given. Let  $k18\_euclid : \iota \Rightarrow \iota$  be given. Let  $r1\_topreal1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_jgraph\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  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  $k5\_topmetr : \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v5\_pre\_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & \quad X1 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid X0)))) \Rightarrow (\forall X2. \\
 & \quad (m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X3.( \\
 & \quad m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\neg(r1\_topreal1 \\
 & \quad (k15\_euclid X0) X2 X3 X1) \wedge (\forall X4.((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 \\
 & \quad X4 (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 (k15\_euclid X0))) \wedge ( \\
 & \quad m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 k5\_topmetr) \\
 & \quad (u1\_struct\_0 (k15\_euclid X0)))))) \Rightarrow (\neg(v5\_pre\_topc X4 k5\_topmetr \\
 & \quad (k15\_euclid X0)) \wedge ((v2\_funct\_1 X4) \wedge ((k2\_relset\_1 (u1\_struct\_0 \\
 & \quad (k15\_euclid X0)) X4 = X1) \wedge ((k1\_funct\_1 X4 k6\_numbers = X2) \wedge (k1\_funct\_1 \\
 & \quad X4 np\_1 = X3))))))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X4.(v1\_xreal\_0 X4) \Rightarrow (\forall X5.(v1\_xreal\_0 X5) \Rightarrow (\forall X6. \\
& (v1\_xreal\_0 X6) \Rightarrow (\forall X7.(v1\_xreal\_0 X7) \Rightarrow (\forall X8.((v1\_funct\_1 \\
& X8) \wedge ((v1\_funct\_2 X8 (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 (k15\_euclid \\
& np\_2))) \wedge (m1\_subset\_1 X8 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& k5\_topmetr) (u1\_struct\_0 (k15\_euclid np\_2)))))) \Rightarrow (\forall X9. \\
& ((v1\_funct\_1 X9) \wedge ((v1\_funct\_2 X9 (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 \\
& (k15\_euclid np\_2))) \wedge (m1\_subset\_1 X9 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 k5\_topmetr) (u1\_struct\_0 (k15\_euclid np\_2)))))) \Rightarrow \\
& (\neg(\neg r1\_xxreal\_0 X5 X4) \wedge (\neg r1\_xxreal\_0 X7 X6) \wedge ((k17\_euclid X0 = \\
& X4) \wedge ((k17\_euclid X1 = X5) \wedge ((k18\_euclid X2 = X6) \wedge ((k18\_euclid X3 = \\
& X6) \wedge ((r1\_xxreal\_0 X6 (k18\_euclid X0)) \wedge ((r1\_xxreal\_0 (k18\_euclid \\
& X0) X7) \wedge ((r1\_xxreal\_0 X6 (k18\_euclid X1)) \wedge ((r1\_xxreal\_0 (k18\_euclid \\
& X1) X7) \wedge (\neg r1\_xxreal\_0 (k17\_euclid X3) X4) \wedge (\neg r1\_xxreal\_0 (k17\_euclid \\
& X2) (k17\_euclid X3)) \wedge ((r1\_xxreal\_0 (k17\_euclid X2) X5) \wedge ((k1\_funct\_1 \\
& X8 k6\_numbers = X0) \wedge ((k1\_funct\_1 X8 np\_1 = X2) \wedge ((k1\_funct\_1 X9 \\
& k6\_numbers = X1) \wedge ((k1\_funct\_1 X9 np\_1 = X3) \wedge ((v5\_pre\_topc X8 k5\_topmetr \\
& (k15\_euclid np\_2)) \wedge ((v2\_funct\_1 X8) \wedge ((v5\_pre\_topc X9 k5\_topmetr \\
& (k15\_euclid np\_2)) \wedge ((v2\_funct\_1 X9) \wedge ((r1\_tarski (k2\_relset\_1 \\
& (u1\_struct\_0 (k15\_euclid np\_2)) X8) (k2\_jgraph\_6 X4 X5 X6 X7)) \wedge \\
& ((r1\_tarski (k2\_relset\_1 (u1\_struct\_0 (k15\_euclid np\_2)) X9) \\
& (k2\_jgraph\_6 X4 X5 X6 X7)) \wedge (r1\_xboole\_0 (k2\_relset\_1 (u1\_struct\_0 \\
& (k15\_euclid np\_2)) X8) (k2\_relset\_1 (u1\_struct\_0 (k15\_euclid \\
& np\_2)) X9))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\
& ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \tag{3}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X4.(v1\_xreal\_0 X4)\Rightarrow(\forall X5.(v1\_xreal\_0 X5)\Rightarrow(\forall X6. \\ & (v1\_xreal\_0 X6)\Rightarrow(\forall X7.(v1\_xreal\_0 X7)\Rightarrow(\forall X8.(m1\_subset\_1 \\ & X8 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2))))\Rightarrow(\forall X9. \\ & (m1\_subset\_1 X9 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid np\_2))))\Rightarrow \\ & (\neg(\neg r1\_xxreal\_0 X5 X4)\wedge(\neg r1\_xxreal\_0 X7 X6)\wedge((k17\_euclid X0 = \\ & X4)\wedge((k17\_euclid X1 = X5)\wedge((k18\_euclid X2 = X6)\wedge((k18\_euclid X3 = \\ & X6)\wedge((r1\_xxreal\_0 X6 (k18\_euclid X0))\wedge((r1\_xxreal\_0 (k18\_euclid \\ & X0) X7)\wedge((r1\_xxreal\_0 X6 (k18\_euclid X1))\wedge((r1\_xxreal\_0 (k18\_euclid \\ & X1) X7)\wedge(\neg r1\_xxreal\_0 (k17\_euclid X3) X4)\wedge(\neg r1\_xxreal\_0 (k17\_euclid \\ & X2) (k17\_euclid X3))\wedge((r1\_xxreal\_0 (k17\_euclid X2) X5)\wedge((r1\_topreal1 \\ & (k15\_euclid np\_2) X0 X2 X8)\wedge((r1\_topreal1 (k15\_euclid np\_2) \\ & X1 X3 X9)\wedge((r1\_tarski X8 (k2\_jgraph\_6 X4 X5 X6 X7))\wedge((r1\_tarski \\ & X9 (k2\_jgraph\_6 X4 X5 X6 X7))\wedge(r1\_xboole\_0 X8 X9))))))))))))))))))))))))))\end{aligned}$$