

t40\_jgraph\_7 (TMGw-  
BAT1F8JJ2LpDDUaNGFz27VQ9KERuLe7)

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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  $k18\_euclid : \iota \Rightarrow \iota$  be given. Let  $k17\_euclid : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal.0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_jordan17 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_sppol.2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_jordan6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal.0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc.1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset.1 X0 (u1\_struct.0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X1.(m1\_subset.1 X1 (u1\_struct.0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X2.(v1\_xreal.0 X2) \Rightarrow (\forall X3.(v1\_xreal.0 X3) \Rightarrow (\forall X4. \\
& (v1\_xreal.0 X4) \Rightarrow (\forall X5.(v1\_xreal.0 X5) \Rightarrow (((k18\_euclid X0 = \\
& X5) \wedge ((k17\_euclid X1 = X3) \wedge ((r1\_xxreal.0 X2 (k17\_euclid X0)) \wedge \\
& (r1\_xxreal.0 (k17\_euclid X0) X3) \wedge ((r1\_xxreal.0 X4 (k18\_euclid \\
& X1)) \wedge (r1\_xxreal.0 (k18\_euclid X1) X5)))))) \Rightarrow ((r1\_xxreal.0 X3 \\
& X2) \vee ((r1\_xxreal.0 X5 X4) \vee (r1\_jordan6 (k1\_sppol.2 X2 X3 X4 X5) X0 \\
& X1))))))))) \tag{1}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1\_xxreal.0 X0) \Rightarrow (\forall X1.(v1\_xxreal.0 X1) \Rightarrow (\forall X2. \\
& (v1\_xxreal.0 X2) \Rightarrow (((r1\_xxreal.0 X0 X1) \wedge (r1\_xxreal.0 X1 X2)) \Rightarrow \\
& (r1\_xxreal.0 X0 X2)))) \tag{2}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset.1 X0 (u1\_struct.0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X1.(m1\_subset.1 X1 (u1\_struct.0 (k15\_euclid np\_2))) \Rightarrow \\
& (\forall X2.(v1\_xreal.0 X2) \Rightarrow (\forall X3.(v1\_xreal.0 X3) \Rightarrow (\forall X4. \\
& (v1\_xreal.0 X4) \Rightarrow (\forall X5.(v1\_xreal.0 X5) \Rightarrow (((k17\_euclid X0 = \\
& X3) \wedge ((k17\_euclid X1 = X3) \wedge ((r1\_xxreal.0 X4 (k18\_euclid X1)) \wedge \\
& r1\_xxreal.0 (k18\_euclid X0) X5)))) \Rightarrow ((r1\_xxreal.0 X3 X2) \vee ((r1\_xxreal.0 \\
& X5 X4) \vee ((r1\_xxreal.0 (k18\_euclid X0) (k18\_euclid X1)) \vee (r1\_jordan6 \\
& (k1\_sppol.2 X2 X3 X4 X5) X0 X1))))))))) \tag{3}
\end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_xreal\_0 X0)\wedge \\ & ((v1\_xreal\_0 X1)\wedge((v1\_xreal\_0 X2)\wedge(v1\_xreal\_0 X3))))\Rightarrow(m1\_subset\_1 \\ & (k1\_sppol\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid \\ & np\_2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (m1\_subset\_1 (k18\_euclid X0) k1\_numbers) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 (u1\_struct\_0 (k15\_euclid \\ & np\_2))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid \\ & np\_2)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid \\ & np\_2)))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid \\ & np\_2)))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 (k15\_euclid \\ & np\_2))))\Rightarrow((r1\_jordan17 X0 X1 X2 X3 X4)\Leftrightarrow(\neg(\neg(r1\_jordan6 X0 X1 X2)\wedge \\ & ((r1\_jordan6 X0 X2 X3)\wedge(r1\_jordan6 X0 X3 X4))\wedge((\neg(r1\_jordan6 \\ & X0 X2 X3)\wedge((r1\_jordan6 X0 X3 X4)\wedge(r1\_jordan6 X0 X4 X1)))\wedge((\neg(r1\_jordan6 \\ & X0 X3 X4)\wedge((r1\_jordan6 X0 X4 X1)\wedge(r1\_jordan6 X0 X1 X2)))\wedge(\neg(r1\_jordan6 \\ & X0 X4 X1)\wedge((r1\_jordan6 X0 X1 X2)\wedge(r1\_jordan6 X0 X2 X3)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_xxreal\_0 X0)\wedge(v1\_xxreal\_0 X1))\Rightarrow( \\ & (r1\_xxreal\_0 X0 X1)\vee(r1\_xxreal\_0 X1 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xxreal\_0 X0) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (9)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid np\_2)))\Rightarrow \\ & (\forall X4.(v1\_xreal\_0 X4)\Rightarrow(\forall X5.(v1\_xreal\_0 X5)\Rightarrow(\forall X6. \\ & (v1\_xreal\_0 X6)\Rightarrow(\forall X7.(v1\_xreal\_0 X7)\Rightarrow(((k18\_euclid X0 = \\ & X7)\wedge((k17\_euclid X1 = X5)\wedge((k17\_euclid X2 = X5)\wedge((k17\_euclid X3 = \\ & X5)\wedge((r1\_xxreal\_0 X4 (k17\_euclid X0))\wedge((r1\_xxreal\_0 (k17\_euclid \\ & X0) X5)\wedge((r1\_xxreal\_0 (k18\_euclid X1) X7)\wedge(r1\_xxreal\_0 X6 (k18\_euclid \\ & X3))))))))))\Rightarrow((r1\_xxreal\_0 X5 X4)\vee((r1\_xxreal\_0 X7 X6)\vee((r1\_xxreal\_0 \\ & (k18\_euclid X1) (k18\_euclid X2))\vee((r1\_xxreal\_0 (k18\_euclid X2) \\ & (k18\_euclid X3))\vee(r1\_jordan17 (k1\_sppol\_2 X4 X5 X6 X7) X0 X1 X2 X3)))))))))) \end{aligned}$$