

# t20\_jordan5b (TMHwawEvhsaaUCnSBMoD- sUdgfjh9ZSBd7dK)

October 27, 2020

Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_topreal1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_topreal1 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_jordan3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_jordan3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v2\_topreal1 : \iota \Rightarrow o$  be given. Let  $v3\_topreal1 : \iota \Rightarrow o$  be given. Let  $v1\_topreal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m2\_finseq\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\ & (((v4\_topreal1 X0) \wedge (X1 \in k3\_topreal1 np\_2 X0)) \Rightarrow ((X1 = k1\_funct\_1 \\ & X0 np\_1) \vee (v4\_topreal1 (k3\_jordan3 X0 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_finseq\_1 X0 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 (k15\_euclid np\_2))) \Rightarrow \\ & ((X1 \in k3\_topreal1 np\_2 X0) \Rightarrow ((k1\_funct\_1 (k3\_jordan3 X0 X1) (k3\_finseq\_1 \\ & (k3\_jordan3 X0 X1)) = X1) \wedge (\forall X2.(m1\_subset\_1 X2 k5\_numbers) \Rightarrow \\ & (((r1\_xxreal\_0 np\_1 X2) \wedge (r1\_xxreal\_0 X2 (k1\_jordan3 X0 X1))) \Rightarrow \\ & (k1\_funct\_1 (k3\_jordan3 X0 X1) X2 = k1\_funct\_1 X0 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(m2\_finseq\_1 \\ & X1 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow ((r1\_xxreal\_0 np\_2 (k3\_finseq\_1 \\ & X1)) \Rightarrow ((k1\_funct\_1 X1 np\_1 \in k3\_topreal1 X0 X1) \wedge ((k7\_partfun1 \\ & (u1\_struct\_0 (k15\_euclid X0)) X1 np\_1 \in k3\_topreal1 X0 X1) \wedge ((k1\_funct\_1 \\ & X1 (k3\_finseq\_1 X1) \in k3\_topreal1 X0 X1) \wedge (k7\_partfun1 (u1\_struct\_0 \\ & (k15\_euclid X0)) X1 (k3\_finseq\_1 X1) \in k3\_topreal1 X0 X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 \ X1 \ X0) \Leftrightarrow (m1\_finseq\_1 \ X1 \ X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1\_finseq\_1 \ X0 \ (u1\_struct\_0 \ (k15\_euclid \\ & \ np\_2))) \wedge (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ (k15\_euclid \ np\_2)))) \Rightarrow \\ & (m2\_finseq\_1 \ (k3\_jordan3 \ X0 \ X1) \ (u1\_struct\_0 \ (k15\_euclid \ np\_2))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m2\_finseq\_1 \ X0 \ (u1\_struct\_0 \ (k15\_euclid \ np\_2))) \Rightarrow \\ & ((v4\_topreal1 \ X0) \Leftrightarrow ((v2\_funct\_1 \ X0) \wedge ((r1\_xxreal\_0 \ np\_2 \ (k3\_finseq\_1 \\ & \ X0)) \wedge ((v2\_topreal1 \ X0) \wedge ((v3\_topreal1 \ X0) \wedge (v1\_topreal1 \ X0)))))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. (m2\_finseq\_1 \ X0 \ (u1\_struct\_0 \ (k15\_euclid \ np\_2))) \Rightarrow \\ & (\forall X1. (m1\_subset\_1 \ X1 \ (u1\_struct\_0 \ (k15\_euclid \ np\_2)))) \Rightarrow \\ & (((X1 \in k3\_topreal1 \ np\_2 \ X0) \wedge (v4\_topreal1 \ X0)) \Rightarrow ((X1 = k1\_funct\_1 \\ & \ X0 \ np\_1) \vee (X1 \in k3\_topreal1 \ np\_2 \ (k3\_jordan3 \ X0 \ X1)))) \end{aligned}$$