

# t2\_laplace (TMZcZP- wiU4L5aPvTU AeKYnip9Yvdu3uWt2g)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m1\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k9\_matrix\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_nat\_d : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k2\_finseq\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_matrix\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_2 : \iota \Rightarrow \iota$  be given. Let  $k8\_matrix\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k7\_matrix\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_matrix\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.(v7\_ordinal1 X1) \Rightarrow ((X1 \in k4\_finseq\_1 X0) \Rightarrow (k3\_finseq\_1 \\ & (k2\_finseq\_3 X1 X0) = k7\_nat\_d (k3\_finseq\_1 X0) np\_1))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1.(m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 \\ & X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge \\ & ((v5\_group\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 \\ & X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\ & ((v7\_ordinal1 X1) \wedge ((v1\_matrix\_1 X2) \wedge (m1\_finseq\_1 X2 (k3\_finseq\_2 \\ & (u1\_struct\_0 X0)))))) \Rightarrow (k8\_matrix\_2 X0 X1 X2 = k2\_finseq\_3 X1 X2) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge (v7\_ordinal1 X1) \wedge (v7\_ordinal1 X2)) \Rightarrow (\forall X3. (m1\_matrix\_1 X3 X0 X1 X2) \Rightarrow ((v1\_matrix\_1 X3) \wedge (m2\_finseq\_1 X3 (k3\_finseq\_2 X0)))) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1)) \quad (6)$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0. (l1\_algstr\_0 X0) \Rightarrow (l1\_struct\_0 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge ((v7\_ordinal1 X1) \wedge ((v1\_matrix\_1 X2) \wedge (m1\_finseq\_1 X2 (k3\_finseq\_2 (u1\_struct\_0 X0)))))) \Rightarrow ((v1\_matrix\_1 (k8\_matrix\_2 X0 X1 X2)) \wedge (m2\_finseq\_1 (k8\_matrix\_2 X0 X1 X2) (k3\_finseq\_2 (u1\_struct\_0 X0)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v7\_ordinal1 X0) \wedge (((\neg v2\_struct\_0 X1) \wedge ((\neg v6\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v33\_algstr\_0 X1) \wedge ((v3\_group\_1 X1) \wedge ((v5\_group\_1 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_1 X1) \wedge ((v5\_vectsp\_1 X1) \wedge (l6\_algstr\_0 X1)))))))))) \wedge ((v1\_matrix\_1 X2) \wedge (m1\_finseq\_1 X2 (k3\_finseq\_2 (u1\_struct\_0 X1)))))) \Rightarrow ((v1\_matrix\_1 (k7\_matrix\_2 X0 X1 X2)) \wedge (m2\_finseq\_1 (k7\_matrix\_2 X0 X1 X2) (k3\_finseq\_2 (u1\_struct\_0 X1)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2. \\
& (v7\_ordinal1\ X2) \Rightarrow (\forall X3. ((\neg v2\_struct\_0\ X3) \wedge ((\neg v6\_struct\_0 \\
& X3) \wedge ((v13\_algstr\_0\ X3) \wedge ((v33\_algstr\_0\ X3) \wedge ((v3\_group\_1\ X3) \wedge \\
& ((v5\_group\_1\ X3) \wedge ((v2\_rlvect\_1\ X3) \wedge ((v3\_rlvect\_1\ X3) \wedge ((v4\_rlvect\_1 \\
& X3) \wedge ((v4\_vectsp\_1\ X3) \wedge ((v5\_vectsp\_1\ X3) \wedge (l6\_algstr\_0\ X3)))))))))) \Rightarrow \\
& (\forall X4.(m1\_matrix\_1\ X4\ (u1\_struct\_0\ X3)\ X2\ X2) \Rightarrow (k9\_matrix\_2 \\
& X0\ X1\ X2\ X3\ X4 = k7\_matrix\_2\ X1\ X3\ (k8\_matrix\_2\ X3\ X0\ X4))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0\ X1) \wedge \\
& ((\neg v6\_struct\_0\ X1) \wedge ((v13\_algstr\_0\ X1) \wedge ((v33\_algstr\_0\ X1) \wedge ( \\
& (v3\_group\_1\ X1) \wedge ((v5\_group\_1\ X1) \wedge ((v2\_rlvect\_1\ X1) \wedge ((v3\_rlvect\_1 \\
& X1) \wedge ((v4\_rlvect\_1\ X1) \wedge ((v4\_vectsp\_1\ X1) \wedge ((v5\_vectsp\_1\ X1) \wedge \\
& (l6\_algstr\_0\ X1)))))))))) \Rightarrow (\forall X2. ((v1\_matrix\_1\ X2) \wedge \\
& (m2\_finseq\_1\ X2\ (k3\_finseq\_2\ (u1\_struct\_0\ X1)))) \Rightarrow (\forall X3. \\
& ((v1\_matrix\_1\ X3) \wedge (m2\_finseq\_1\ X3\ (k3\_finseq\_2\ (u1\_struct\_0 \\
& X1)))) \Rightarrow ((X3 = k7\_matrix\_2\ X0\ X1\ X2) \Leftrightarrow ((k3\_finseq\_1\ X3 = k3\_finseq\_1 \\
& X2) \wedge (\forall X4.(v7\_ordinal1\ X4) \Rightarrow ((X4 \in k4\_finseq\_1\ X2) \Rightarrow (k1\_funct\_1 \\
& X3\ X4 = k2\_finseq\_3\ X0\ (k8\_matrix\_1\ (u1\_struct\_0\ X1)\ X2\ X4)))))))))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow ( \\
& \forall X2.(v7\_ordinal1\ X2) \Rightarrow (\forall X3. ((v1\_matrix\_1\ X3) \wedge ( \\
& m2\_finseq\_1\ X3\ (k3\_finseq\_2\ X0))) \Rightarrow ((m1\_matrix\_1\ X3\ X0\ X1\ X2) \Leftrightarrow ( \\
& (k3\_finseq\_1\ X3 = X1) \wedge (\forall X4.(m2\_finseq\_1\ X4\ X0) \Rightarrow ((X4 \in k10\_xtuple\_0 \\
& X3) \Rightarrow (k3\_finseq\_1\ X4 = X2)))))))))
\end{aligned} \tag{14}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0\ X0) \wedge ((\neg v6\_struct\_0\ X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0\ X0) \wedge ((v3\_group\_1\ X0) \wedge ((v5\_group\_1\ X0) \wedge ( \\
& (v2\_rlvect\_1\ X0) \wedge ((v3\_rlvect\_1\ X0) \wedge ((v4\_rlvect\_1\ X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1\ X0) \wedge (l6\_algstr\_0\ X0)))))))))) \Rightarrow (\forall X1. \\
& (v7\_ordinal1\ X1) \Rightarrow (\forall X2.(v7\_ordinal1\ X2) \Rightarrow (\forall X3.( \\
& v7\_ordinal1\ X3) \Rightarrow (\forall X4.(m1\_matrix\_1\ X4\ (u1\_struct\_0\ X0) \\
& X3\ X3) \Rightarrow ((X1 \in k4\_finseq\_1\ X4) \Rightarrow (k3\_finseq\_1\ (k9\_matrix\_2\ X1\ X2\ X3 \\
& X0\ X4) = k7\_nat.d\ X3\ np\_1))))))
\end{aligned}$$