

# t29\_matrtop1 (TMTz- moJV6AgPSnzs1BDP4vYrW8w6WuguygL)

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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  $k2\_vectsp\_1 : \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $k3\_matrtop1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rltopsp1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ (k15\_euclid X0))) \Rightarrow (k5\_algstr\_0 (k15\_euclid X0) X1 X1 = k4\_struct\_0 \\ (k15\_euclid X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X3.( \\ m1\_subset\_1 X3 (u1\_struct\_0 (k15\_euclid X0))) \Rightarrow (\forall X4.(m1\_matrix\_1 \\ X4 (u1\_struct\_0 k2\_vectsp\_1) X0 X1) \Rightarrow (k3\_funct\_2 (u1\_struct\_0 \\ (k15\_euclid X0)) (u1\_struct\_0 (k15\_euclid X1)) (k3\_matrtop1 X0 \\ X1 X4) (k5\_algstr\_0 (k15\_euclid X0) X2 X3) = k5\_algstr\_0 (k15\_euclid \\ X1) (k3\_funct\_2 (u1\_struct\_0 (k15\_euclid X0)) (u1\_struct\_0 (k15\_euclid \\ X1)) (k3\_matrtop1 X0 X1 X4) X2) (k3\_funct\_2 (u1\_struct\_0 (k15\_euclid \\ X0)) (u1\_struct\_0 (k15\_euclid X1)) (k3\_matrtop1 X0 X1 X4) X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow ((\neg v2\_struct\_0 (k15\_euclid X0)) \wedge (v5\_rltopsp1 (k15\_euclid X0))) \tag{3}$$

Assume the following.

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

Assume the following.

$$\forall X0.\exists X1.m1\_subset\_1 X1 X0 \quad (5)$$

Assume the following.

$$\forall X0.(l1\_rltopsp1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l1\_pre\_topc X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0)\Rightarrow(l1\_struct\_0 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.((v7\_ordinal1 X0)\wedge((v7\_ordinal1 \\ &X1)\wedge(m1\_matrix\_1 X2 (u1\_struct\_0 k2\_vectsp\_1) X0 X1)))\Rightarrow((v1\_funct\_1 \\ &(k3\_matrtop1 X0 X1 X2))\wedge((v1\_funct\_2 (k3\_matrtop1 X0 X1 X2) (u1\_struct\_0 \\ &(k15\_euclid X0)) (u1\_struct\_0 (k15\_euclid X1))))\wedge(m1\_subset\_1 \\ &(k3\_matrtop1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 \\ &(k15\_euclid X0)) (u1\_struct\_0 (k15\_euclid X1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} &\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ &(((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ &(k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(m1\_subset\_1 ( \\ &k3\_funct\_2 X0 X1 X2 X3) X1) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((v5\_rltopsp1 (k15\_euclid X0))\wedge(l1\_rltopsp1 (k15\_euclid X0))) \quad (10)$$

### Theorem 1

$$\begin{aligned} &\forall X0.(v7\_ordinal1 X0)\Rightarrow(\forall X1.(v7\_ordinal1 X1)\Rightarrow(\forall X2. \\ &(m1\_matrix\_1 X2 (u1\_struct\_0 k2\_vectsp\_1) X0 X1)\Rightarrow(k3\_funct\_2 \\ &(u1\_struct\_0 (k15\_euclid X0)) (u1\_struct\_0 (k15\_euclid X1)) ( \\ &k3\_matrtop1 X0 X1 X2) (k4\_struct\_0 (k15\_euclid X0)) = k4\_struct\_0 \\ &(k15\_euclid X1)))) \end{aligned}$$