> Info
>
> This note, that was found here, as a part of a collection
> is written (completely with human hands) by Rupadarshi Ray,
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$SL(2)(\mathbb{Z}_2)$

We know the group $SL(2)(\mathbb{Z}_2)$ acts on the 2 dimensional vector space over the field $\mathbb{Z}_2$

$$\begin{aligned} SL(2)(\mathbb{Z}_2) \curvearrowright \mathbb{Z}_2^2 \setminus \left\{ \begin{bmatrix} 0 \\ 0 \end{bmatrix} \right\} \\ = \left\{ \begin{bmatrix} 0 \\ 1 \end{bmatrix}, \begin{bmatrix} 1 \\ 1 \end{bmatrix}, \begin{bmatrix} 1 \\ 0 \end{bmatrix} \right\} \end{aligned}$$

Thus, this is a homomorphism

$$SL(2)(\mathbb{Z}_2) \to S_3$$

pairs	matrix that exchanges the pair
$\begin{bmatrix} 0 \\ 1 \end{bmatrix}, \begin{bmatrix} 1 \\ 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$
$\begin{bmatrix} 0 \\ 1 \end{bmatrix}, \begin{bmatrix} 1 \\ 1 \end{bmatrix}$	$\begin{bmatrix} & 1 \\ 1 & \end{bmatrix}$
$\begin{bmatrix} 1 \\ 0 \end{bmatrix}, \begin{bmatrix} 1 \\ 1 \end{bmatrix}$	$\begin{bmatrix} 1 & \\ & 1 \end{bmatrix}$

Current note has 0 direct children and 0 total descendants.

- squishy
  - SL
    - $SL(2)(\mathbb{Z}_2)$

And it has 15 siblings.

- squishy
  - SL
    - SL(2)
    - $SL(2)(\mathbb{C})$
    - $PSL(n, \mathbb{C})$
    - $SL(2)(\mathbb{R})$
    - $SL(2)(\mathbb{R}) / SL(2)(\mathbb{Z})$
    - H_q
    - $PSL(2)(\mathbb{Z})[2]$
    - $[PSL(2)(\mathbb{Z})[2], PSL(2)(\mathbb{Z})[2\$]]$
    - $PSL(2)(\mathbb{Z})[N]$
    - $SL(3, \mathbb{R})$
    - $SL(2)(\mathbb{Z})$
    - $PSL(2)(\mathbb{Z})$
    - Congruent subgroups of $PSL(2)(\mathbb{Z})$
    - $SL(n, \mathbb{Z})$
    - $SL(2)(\mathbb{Z}_2)$